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MARCH 1, 1994

VOLUME SEVEN NUMBER TEN

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THE MAGAZINE FOR INFORMATION EX

COVER STORY

How IS Helped Put US Shoe On A Firmer Footing

ALSO INSIDE

Our Annual Survey: *See Yourself As Others See You!*



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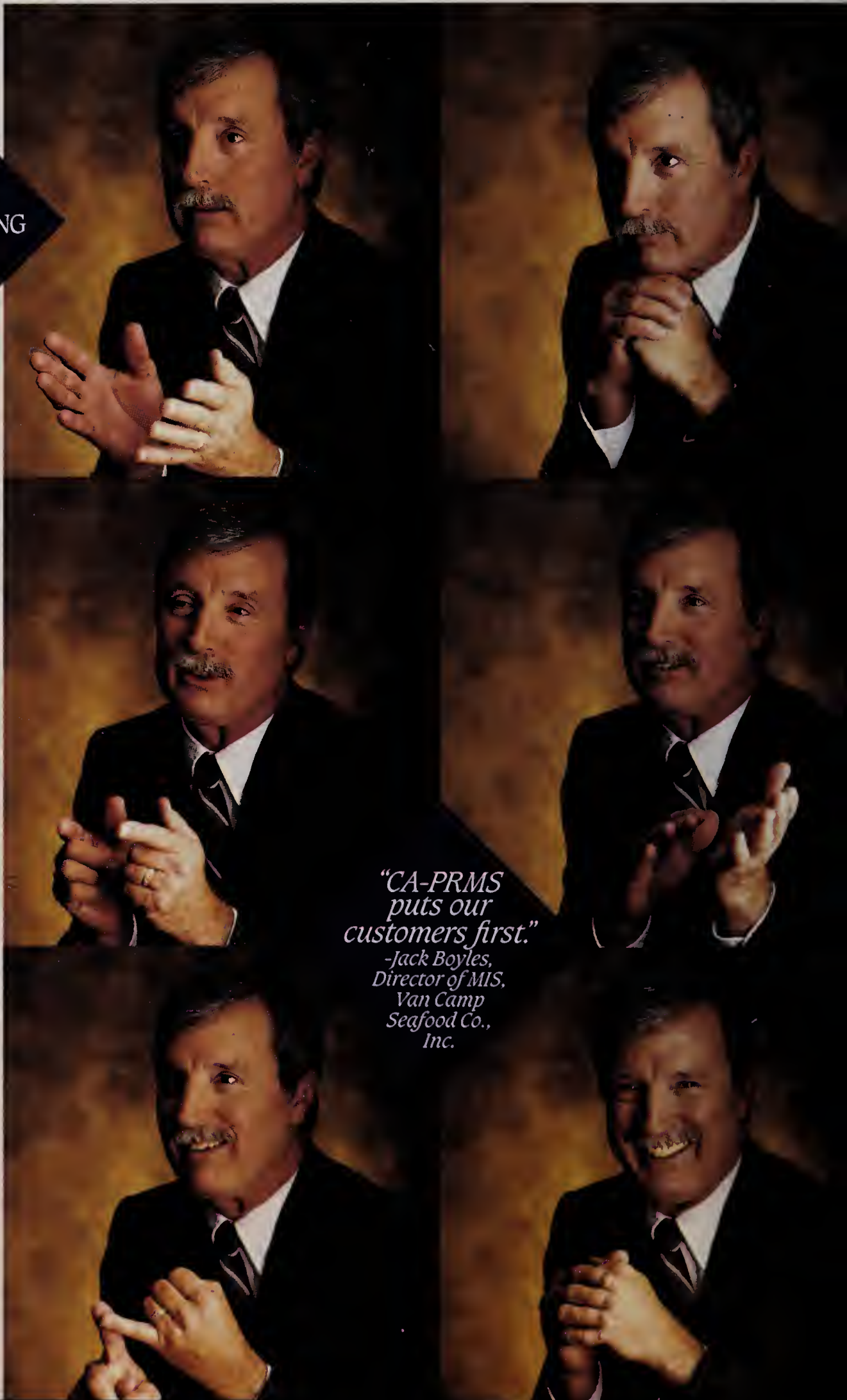
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CIO

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Cover photo by Tom Rogowski

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Designing a Brand New Shoe

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Web Converting Inc. set out to become a learning organization long before that strategy earned its vogue status. In part, this happened because Web is an organization that may have been born to learn.

By Megan Santosus

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Some people will tell you that the CIO is doing a top-notch job, playing a strategic role in the business and showing great leadership potential. Unfortunately, those may not be the people who matter most.

By David H. Freedman



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Author and online pioneer Howard Rheingold argues that electronic networks are giving us the chance to create a better world.

By Lew McCreary

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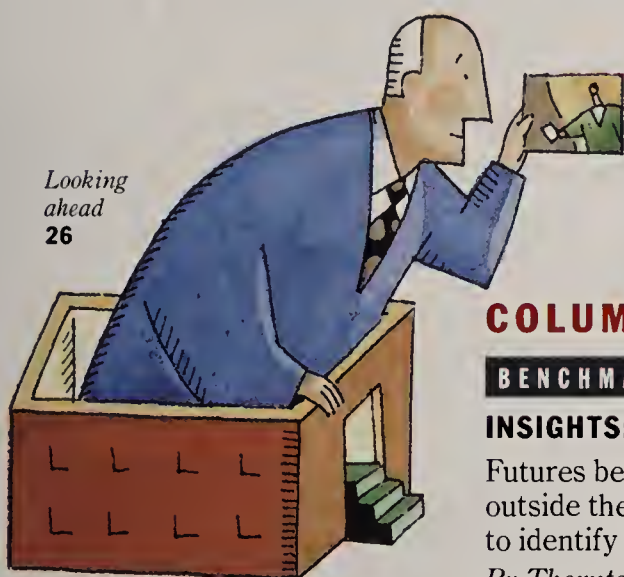
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INSIGHTS: OUTWARD BOUND

Futures benchmarking encourages companies to look not just outside themselves but outside of their corporate mind-sets to identify new, quickly achievable revenue sources.

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STATE OF THE ART: WHO YOU GONNA CALL?

At many companies, users with technical problems or questions call their local help desks. With the growth in end-user computing, these tech-support operations are increasingly important to productivity.

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With an expansion in the works, one hospital had to cure its paperwork ills before it could proceed. Image processing did the trick.

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Two articles reported in this issue of *CIO* examine the views of peer management on the role of the information executive. And the perspectives couldn't be more different. Depending on the types of enterprises CIOs work for, they can find themselves flourishing or foundering.

Our fifth annual survey of how non-IS executives rate CIOs, conducted this year by Ernst & Young, showed marked differences in how general management and peer executives value the information executive. Adding another layer to these widely divergent results, Ernst & Young's survey also examined how CIOs view their own roles (please see "A Difference of Opinion" on Page 52).

Some conclusions of this survey warn of a growing resentment on the part of peer executives toward CIOs. On the whole, the executives who manage an enterprise's functional areas or corporate divisions are not comfortable with CIOs taking leadership positions or strategic roles; they don't see them as key players in reengineering business practices. Rather, these managers largely see the information executive fulfilling a support role.

One telling statistic was that 80 percent of CIOs and 62 percent of their bosses see IS as leading the use of IT to enable business change, but only one-third of peer executives agreed. Peer management is more concerned with IS's contribution to operational efficiency and see the CIO's role as providing information for decision-making. Perhaps as a result of these divergent viewpoints, only 17 percent of peer executives reported that they work "exceptionally well" with IS executives.

After reading our survey, turn to Senior Writer Richard Pastore's profile of U.S. Shoe (beginning on Page 42), which presents an opposing view of the role of the IS executive. David Dorff, now the COO of the company's Footwear Group, was initially hired as U.S. Shoe's CIO in 1990. At that time, a new top-management team made it known that technology was critical to changing business practices in order to rescue the company from a continued downward financial spiral. As a result of Dorff's efforts, divisional management now sees IS as a key strategic component of the corporation. And Dorff recently made the transition from IS into general management.

Finally, on a sad note, *CIO* recently lost a valued member of our company's team. Michael C. Peterson, *CIO*'s production associate, passed away from a rare disease at the all-too-premature age of 28. Michael's belief in the importance of organ donation made possible four transplant operations. Our group feels keenly the loss of Michael's presence.

Marcia Blumenthal



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Editorial Offices CIO Publishing Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, Mass. 01701-9208 (508) 872-8200, FAX (508) 879-7784. Printed in the U.S.A.

Subscriber Services (800) 788-4605, FAX (508) 872-0618.

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There will be two types of CIOs in the next few years: employed and unemployed. Standing in the unemployment line will be those CIOs who were unable to quantify return on investment and bring value to the bottom line. Studies are beginning to demonstrate not only direct monetary gains from information technology but productivity increases as well. That being the case, CEOs will no longer tolerate unjustified IT purchases.

That's quite a burden to bear. But *CIO* can help. Take a look at the ESPRIT (Excellence in Strategic Partnering for Return from Information Technology) awards appli-

cation form bound into this issue of *CIO* (following Page 24). On the form you will find a table and a set of questions that can help you formulate return on investment. Whether or not you enter the awards program, this form will help you evaluate your current or future IT investments.

How about securing your career right now? If you collaborated with a business-unit executive to create a system that solved a critical business problem, increased business value or improved bottom-line profits, you could be eligible to win an ESPRIT award. It's more than kudos for a job well done; it's job insurance.

Wayne L. Levy

P.S. Congratulations to the IS and business executives at AT&T Universal Card Services Corp., the Chicago Bureau of Parking, Complete Health Services Inc., the Los Angeles County Department of Public Social Services, the South Florida Water Management District and SynOptics Communications Inc. for winning the 1993 ESPRIT awards.

Coming In CIO

Data for the Masses

As the next century approaches, all types of professionals will spend 10 percent of their time using on-line analysis processing (OLAP) systems, according to the Gartner Group. For IS, that translates into a shift from consolidating data for a few people to disseminating data to many—not an easy adjustment. *CIO* explores this new application to determine what it means for IS.

Giving Consumers What They Want

There's no such thing as exact science when it comes to figuring out what consumers want, but a department within AT&T Bell Labs is doing its best to eliminate the guesswork. To test product ideas, the company's Consumer Lab sets up simulated environments that allow consumers to try out prototypes in settings designed to mimic real life. Armed with this and mountains of other market-research data, the lab's staff aims to reduce the uncertainty in rolling out new products.

Spanning the Globe

Seeing opportunities for growth in emerging foreign markets, Tambrands Inc. had to create a kind of Esperanto that would allow a plant in Auburn, Maine, to perform the same processes in the same manner as a plant in Kiev, Ukraine. And Tambrands wanted those processes to be dictated by best practices as defined by the most-efficient and -effective parts of the company.

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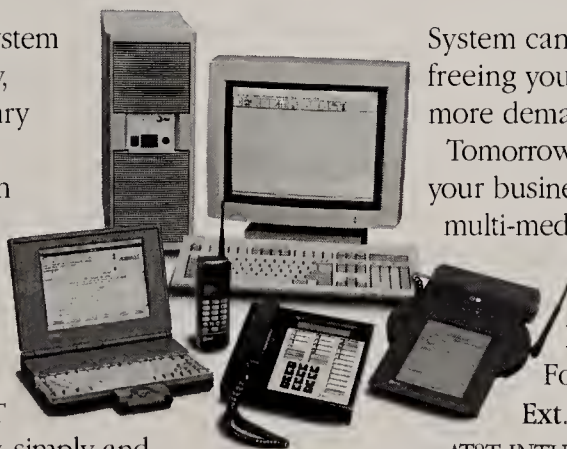
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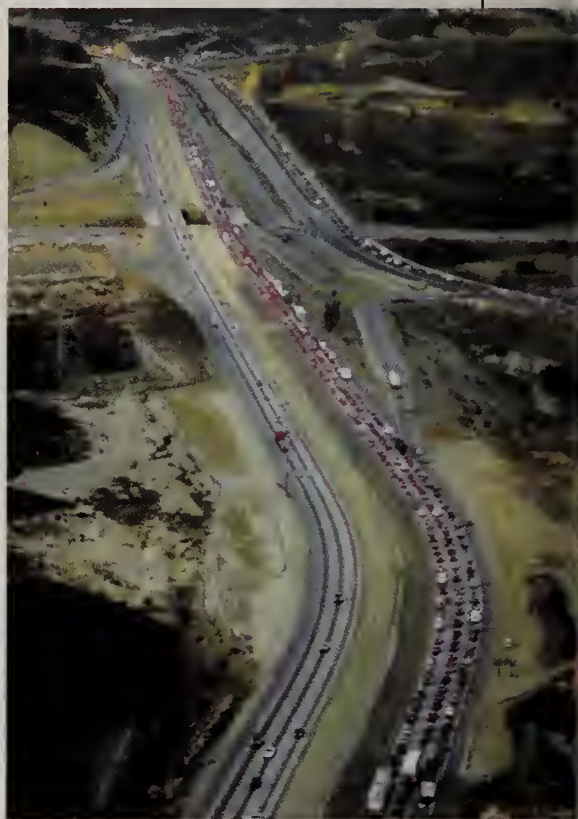
The American Automobile Association's online traffic-alert service shifted into high gear in the wake of the killer earthquake that struck Southern California on Jan. 17. The quake, which measured 6.6 on the Richter scale, damaged bridges, leveled overpasses and buckled pavement on some of the nation's busiest freeways. Motorists venturing out in the days immediately following

the disaster often found themselves sitting in traffic jams 11 miles long and experienced delays of as much as three hours. With some roads expected to remain closed for repairs well into 1995, motorists braced for months of snarled traffic and convoluted detours.

For AAA, the quake provided a chance to road-test the performance of its evolving online service, AAA In-

THE AAA's online service helped disseminate up-to-date information on travel conditions in post-quake Southern California to employees at local and nationwide AAA affiliates.

formation Clearinghouse (AIC), in a disaster. Previously, employees at individual AAA clubs in the United States and Canada used mail, telephone or fax to exchange traffic alerts and information on gas prices, detours and weather. But by the time the quake struck, many were already online with the AIC, trading the same information electronically.



Among those already using the service was AAA's Southern California affiliate. Shortly after the quake, AAA employees posted road closings, detours and alternate routes. Lists were updated frequently.

That information proved valuable to Los Angeles-area motorists who called the auto club for advice on avoiding traffic jams. And thanks to the AIC, the alerts went nationwide, helping AAA members in other states as they fielded calls from local members concerned about West Coast travel plans.

The service, provided by the telecommunications network of GE Information Services, remained up during and after the quake, when regular phone lines crashed or were clogged with calls. "It worked just as we had envisioned it would work," says Lou Fresquez, vice president and CIO for AAA Information Systems, based in Heathrow, Fla.

AAA clubs use the system for a variety of other purposes.

THE DOG ATE MY HOMEWORK 1994

We've all heard tales of computer whiz kids who change their grades by hacking into the school computer. That story has taken an even nastier twist at Dartmouth College, which boasts one of the most-sophisticated computer networks of any American university.

All Dartmouth students are required to buy Macintoshes in their freshman year. The computers are wired into a network that gives students access to—among other things—campuswide E-mail. Recently, *The New York Times* reported, someone used that system to inform students in a Latin American politics course that, due to an emergency in the

professor's family, the midterm had been canceled. E-mail messages usually identify the sender, but in this case the malefactor had managed to disguise his or her identity so that the note seemed to be from a department secretary. Half the class members didn't show up that day, and the culprit was never identified.

Last August, the police department in Hanover, N.H., where Dartmouth is located, was swamped with calls after someone used the system to broadcast a false report that a woman had been raped near campus. Indeed, the

department is well aware of the technology's power to spread both information and disinformation: The chief of police has his own E-mail account that he uses to correct such rumors. ■





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TRENDS

es, Fresquez says, such as transferring operational data to AAA's national office, sharing practices for improving member services and posting ads for available supplies and equipment. The AIC also helps speed the review process for stories published in *AAA World*, a membership magazine for 14 clubs.

Fresquez says the AAA developed the service in response to clubs' requests for a clearinghouse that would allow broader networking than standard E-mail. At the time of the quake, about half of the more than 130 North American AAA clubs were online. Fresquez says the organization's national officials hope all will eventually hit the information superhighway. ■

ACROSS THE POND

Monty Python travels well from Britain to the United States. Haggis doesn't. And the same disparities can be found in the reputation of brand-name products, according to a recent study from The Schechter Group, a consulting firm based in New York.

The company surveyed 300 consumers in the United States and 300 in the United Kingdom and compared their attitudes toward 12 products that are marketed globally. Respondents were asked whether each of the brands represented a product or service "of high quality," "for the '90s," "of reliability," "that I should use."



The largest disparities between the American and British scores occurred for British Airways, Chrysler Corp. and American Airlines Inc., all of which predictably did much better in their home markets. Kraft General Foods Inc., which had the highest U.S. score, dropped 35 percent in Britain, while Mercedes-Benz declined 30 percent in this country.

Conversely, consumer esteem for American H.J. Heinz Co. is 46 percent greater overseas, and Ford Motor Co.'s score increased by 45 percent in the United Kingdom. According to Alvin Schechter, chairman and CEO of the consulting firm, Heinz is thought of as a British company by many in that country owing to its introduction at the British re-

WHAT OUTSOURCING MEANS TO ME

CIOs thinking about outsourcing IS operations can expect a significant change in their job profiles, according to a survey by The Outsourcing Institute, a professional organization located in New York. IS executives involved in outsourcing:

- spend more time on strategic business planning and the management of outside relationships than on any other activities;
- believe that outsourcing has a positive impact on every aspect of the job except for security; and
- consider communications, negotiation and business skills significantly more important than they did before they entered into the contract.

Respondents report a 30 percent increase in the amount of time they spend on strategic business planning, offset by an equivalent reduction in detailed resource and technology planning. Managing outside relationships is in second place, consuming about 16 percent of their time.

"Outsourcing is changing what it takes to be a successful CIO," says Michael Corbett, director of research and member programs at The Outsourcing Institute. "Technology-based skills, be they planning or operations, are taking a back seat to business-based skills." ■

CAREER MOVES

Sea-Land Service Inc. has named WILLIAM C. DONOVAN vice president of information technology and a member of the senior management committee. Donovan is assuming full responsibility for the company's global IT group after sharing the responsibilities with a co-worker since 1992.

WILLIAM E. EAGER is the new senior vice president and CIO at Community Mutual Insurance Co., a health-insurance company in Cincinnati. Eager is responsible for administering an annual budget of approximately \$50 million as well as managing a staff of roughly 400 people.

Brandon Systems Corp. announced the appointment of STEPHEN B. LUCAS to CIO. Before joining the company in 1991, Lucas was manager of financial information centers for IBM Corp. ■



IS FINDING WHAT YOU NEED TAKING MORE TIME THAN YOU HAVE?

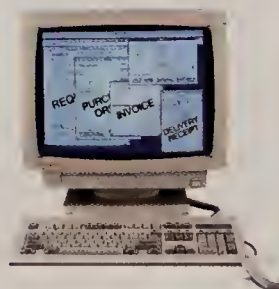
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Introducing Mi³MS[®] 3000. Minolta's revolutionary new image management system. It accepts input from paper, microform, FAX and text files directly so you can collect, organize and use all of your document-based information simply and effectively.

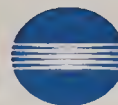
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TRENDLINES

tailoring institution Fortnum & Mason around the turn of the century, as well as its long-established line of English-style salads and processed foods. "The slogan 'Heinz Meanz Beans' is a classic of British advertising," Schechter says.

Five of the 12 global brands had comparable scores in both countries: Coca-Cola Bottling Co., Nestle Foods Corp., American Express Inc., McDonald's Corp. and IBM Corp. ■

WORLD CUP '94

AN AMBITIOUS KICKOFF

This summer's World Cup soccer games will unfold before the watchful eyes of millions of referees. The 52 games will be held in nine U.S. cities in June and July, supported by a large, complex information system—

and if the technology roughs up an event, millions of participants and spectators will cry foul. Make that billions because the games will also be televised worldwide.

Che Che Vidal is vice president of technology for World Cup USA 1994 Inc., a nonprofit organization under the aegis of the Federation Internationale de Football Association, soccer's international governing body in Zurich, Switzerland. The CIO has his fingers crossed—especially since the global client/server system began with his ambition to make the 1994 games, hosted by the United States for the first time, "the most-advanced World Cup ever, technologically." Vidal knows his soccer: In the 1970s and '80s he played on Venezuela's national team. Now he must prove that he can manage technology as well.

He has help. The system supporting the games was created in partnership with EDS Corp., Sprint International and Sun Microsystems

Inc. (The three are marketing partners of the games, along with such companies as American Airlines, Fuji Films and others. Each ponied up no less than \$5 million for the honor.) EDS helped Vidal and his IS managers devise a business vision for the system, built the applications and did the integration work. Sprint contributed the fiber-optic network and Sun, the hardware. The partnership managed to implement the system in nine U.S. locations (plus

Zurich) in less than a year.

By the time the games begin, there will be more than 1,000 workstations on the network. The system will manage the accreditation of the more-than-50,000 participants (players, coaches, officials and roadies) and the anticipated 5,000 journalists. So, if a reporter loses her press badge at one game in Boston, for instance, another could be available when she arrives hours later to cover a second game in Dallas. The system will also provide in-

EYEING THE EXIT

Job satisfaction—or lack thereof—is the best predictor of which executives are most likely to begin a job search.

Work and family conflicts and a spouse's employment

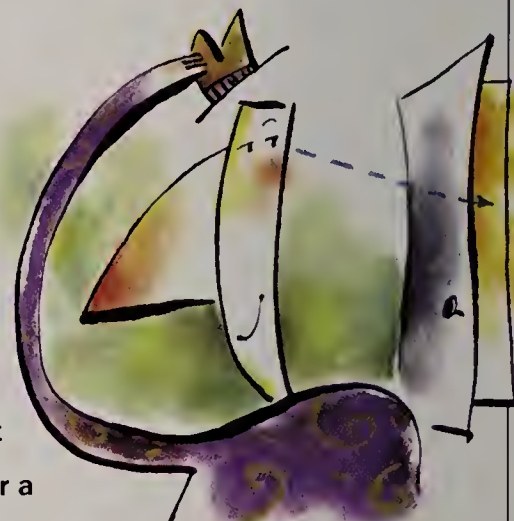
status are also likely to spur a top manager's decision to go on the

market, according to a study of nearly 1,400 senior executives conducted by search firm Paul Ray Berndtson and The Center for Advanced Human Resource Studies at Cornell University.

The study found that more than 75 percent of respondents had initiated preliminary job-exploration activities, such as gathering information about available alternatives; and 58 percent were actively looking.

In contrast, internal opportunities and dissatisfaction with compensation and career progress are the factors most likely to make lower-level executives start updating their resumes. Lower-level executives are also more likely than CEOs to initiate a job search if they perceive their organizations as unsuccessful.

But just because an executive is looking for a new job doesn't mean he or she wants to leave the organization, the study indicates. If many internal opportunities are available, executives will frequently explore new options in an attempt to "signal" to the company that they are marketable elsewhere. ■



CHE CHE VIDAL is expecting world-class technology for this summer's World Cup soccer competition.

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Want to find out more? Call SAP and hear how organizations are already using our integrated software solutions to improve their productivity. And that's music to anyone's ears. Call 1-800-USA-1SAP.



Integrated software. Worldwide.™

TRENDLINES

formation services for the media, such as players' biographies and statistics about the games dating back to the first World Cup Tournament, held in Uruguay in 1930. World Cup officials will be able to use the system to manage logistics (medical,

personnel deployment, transportation) and for a suite of office applications.

The four partners unveiled the system last December in Las Vegas. But the real action will begin this summer, both in the games and behind the scenes. ■

EVENTS

FOSE '94: America's Information Technology Forum

Washington Convention Center, Washington
March 21-24
National Trade Productions Inc.
703 683-8500 or 800 687-7469

Multimedia development, networking, imaging systems, platform trends and options, and enterprise computing. Full-day tutorials, hands-on classroom experience and conference sessions will cover Windows programming, networking and desktop publishing. Registration: \$25 for exposition; free to government employees. Call for conference fees.

Key Issues in Managing Information Technology

Northwestern University, Evanston, Ill.
March 23 and 24
Northwestern University McCormick Continuing Professional Development
708 491-3365

This seminar will help participants distinguish between important trends and passing fads. Line and IS managers can learn about best practices from practitioners and well-known researchers. Fees: \$695-\$795

ASSIST '94: Taking Action Today for Success Tomorrow

Crystal Gateway Marriott, Arlington, Va.
April 24-27
A Shared Solution in Software Technology (ASSIST)
312 321-6880

ASSIST is a nonprofit, international association of Andersen Consulting software users. This conference will provide a forum for information exchange; an opportunity to influence the direction of development activities for Andersen products and services; and quality educational opportunities. Fees: \$695 to \$945

AEME '94: Managing the Speed of Change

Westin Hotel, Chicago
April 27-29
American Executives for Management Excellence (AEME)
602 224-0447, Ext. 104

Through a series of workshops, presentations and hands-on exercises, a national gathering of senior-level executives will explore how corporations sustain competitiveness in a global economy. Workshops will examine successful quality strategies and "how-to" issues. Registration: \$995 for nonmembers



AND ON 275, It's "Parade of Shoe Boxes"

Five-hundred channels. The number hangs in the air—both a promise and a threat—as broadcasters and cable companies scramble to prepare for the era of high-bandwidth, interactive television. But what will they fill them with, asks the viewing public, presented with this embarrassment of riches. Here are some suggestions culled from a discussion on The Whole Earth 'Lectronic Link (WELL), an online service based in Sausalito, Calif., and published in *Harper's Magazine*:

- The Airport-Luggage-Inspection Channel: direct video feeds from baggage X-rays around the world
- The Laundry Channel: 24 hours of the window of an industrial laundry machine
- The Supermarket-Aisle Channel: long tracking shots of carefully stacked cans of potted meats
- The Counter Channel: Every time a viewer flips to it, a big counter increases by one. Sometimes everyone would tune in just to watch the numbers tally really fast.
- CNN Minus 365: last year's complete CNN feed
- The All-Graveyard Channel

Readers with their own ideas on how to fill this impending void are invited to send them to "Trendlines," CIO Publishing, 492 Old Connecticut Path, Framingham, MA 01701. We'll publish the best—and feature them on the CIO Trendlines Channel—coming soon to a cable system near you. ■



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Fred was great.
Ginger was great.
Together they
were spectacular.

The partnership makes it work!

Fred Astaire certainly held his own. But when he paired up with Ginger Rogers, it was pure magic. The same holds true in business. When two diverse business departments forge alliances, the results are often nothing less than brilliant.

That's the idea behind the ESPRIT (*Excellence in Strategic Partnering for Return from Information Technology*) Awards Program. The ESPRIT Awards recognize the strategic partnership between IS management and business management as they apply IT to improve business value and increase profits. Since its inception in 1993, this program has recognized a select group of companies, government agencies and nonprofit organizations that are using IT to attain real business value in measurable ways.

If you can demonstrate the strategic value and increased bottom-line profits as a result of a technology investment, we want to hear about it. We urge you to participate by filling out the ESPRIT Awards application form bound in this issue of *CIO*. If the entry form has been removed, please call Brooke Burton at (508) 935-4449.

ESPRIT Awards sponsored by



THE MAGAZINE FOR INFORMATION EXECUTIVES

and

BOOZ·ALLEN & HAMILTON





APPLICATION FORM

The
ESPRIT
A W A R D S
F O R 1 9 9 4

*Honoring Excellence in
Strategic Partnering
for Return from
Information Technology*

*Sponsored by CIO Magazine and
Booz-Allen & Hamilton*

**Application Deadline
May 16, 1994**

With ESPRIT, partnership takes on a whole new meaning

part·ner·ship (pärt' nər-ship') *n* 1. The state of being a partner; an association of partners. 2. A contract entered into by two or more persons in which each agrees to furnish a part of the capital and labor for a business enterprise, and by which each shares in some fixed proportion of profits and losses.

—*The American Heritage Dictionary*

If there is one word that defines the ESPRIT Awards it's "*partnership*." This program honors those business and technology executives who have joined forces to plan the acquisition of information technology, implement it and quantify its strategic business value in both hard-dollar and soft benefits.

Recognizing Strategic Partnering

CIO and Booz·Allen & Hamilton created the ESPRIT Awards to recognize this spirit of cooperation as well as the ability to prove a positive and sustained impact on the bottom line from strategic IT investments. By communicating the payback of your technology solution, *CIO* and Booz·Allen & Hamilton hope to encourage other businesses to follow your lead.

Obtaining Real Business Value

What business goals have you achieved with your technology solution? Lowered costs? Raised profits? Increased market share? Enhanced image? The list is endless. There are both hard-dollar and soft benefits that come with IT investments. If you and your business partner can provide

tangible facts and figures about return on investment from information technology, we urge you to participate in the ESPRIT Awards program.

Our Challenge To You

If your technology investment is paying off, we want to hear about it. To participate, simply fill out this ESPRIT Awards application. The January 15, 1995 issue of *CIO* will feature profiles of companies, government agencies and nonprofit organizations that successfully document how their partnered IT investments have increased business value.

Then in early 1995, *CIO* and Booz·Allen & Hamilton will host a special awards ceremony honoring these winning organizations.

For additional information, please contact Brooke Burton at (508) 935-4449.

ESPRIT Awards Timeline

Applications Due:
May 16, 1994

Judges Select Winners:
September 1994

Announcement of Winners:
January 1995

Awards Ceremony:
Winter 1995

The 1994 ESPRIT AWARDS

Honoring Excellence in Strategic Partnering for Return from Information Technology

Sponsored by CIO Magazine and Booz·Allen & Hamilton

S**TATEMENT OF PURPOSE**
While most executives are aware of the potential benefits of information technology (IT), some remain unsure of its actual value to their organizations. In order to demonstrate how strategic IT investments initiated by a joint business/IS team can produce both hard-dollar and soft benefits, *CIO Magazine* and Booz·Allen & Hamilton are cosponsoring the second annual ESPRIT Awards. The honorees will be public and private companies, government agencies and not-for-profit organizations which have proven that strategic IT investments can have a positive and sustained impact on the bottom line. Winners will be honored at an awards ceremony and profiled in the January 15, 1995 issue of *CIO Magazine*.

CRITERIA

Winners will be chosen by a panel of independent judges from among entrants who have sent in completed application forms by May 16, 1994. Entries will be judged on the following criteria:

- The extent to which the system furthers the organization's strategic objectives.
- The measurable financial return the system provides to the organization.
- The level of partnership achieved throughout the course of the project by the business unit and the IS organization.
- The extent to which IT was key to the achievement of the overall business solution—the "couldn't have done it without technology" factor.

Telephone interviews, and in some cases face-to-face interviews, will be requested by the Booz·Allen screening teams. These teams may elect to visit the applicants'

sites in order to review in greater depth the system and the environment in which it is functioning, and to examine financial results.

ENTRY GUIDELINES

- The system must have been *operational* prior to July 1, 1992.
- Entries must be made jointly by the IS executive AND the business-unit executive for whom the system delivers value.
- Entrants must agree to be featured, along with their system and organization, in a *CIO* article.

DEADLINE

May 16, 1994

MAIL TO

ESPRIT Awards
CIO Magazine
492 Old Connecticut Path
PO Box 9208
Framingham, MA
01701-9208

- Entries must be complete. Incomplete entries may be returned for elaboration or disqualified.
- Entries must be on 8.5x11-inch paper, one side per sheet.
- The application form may be reproduced.
- Multiple entries from one company will be considered, but each entry must be submitted separately.
- Vendors, public-relations and advertising firms, consultants and other third parties may NOT apply on behalf of another

firm. They are encouraged to forward this form to the "owner" of the system, or to contact *CIO Magazine* to recommend that an application form be sent to their client.

- All entries must be computer-generated or typed; no handwritten entries will be accepted.
- When feasible, an additional copy of the entry should be sent on a 3½ -inch disk. Electronic entries must be limited to word-processing and spreadsheet packages that are compatible with *Microsoft Word* and *Microsoft Excel* on an IBM or Macintosh platform.

1. COMPANY/BUSINESS UNIT

NAME OF PARENT COMPANY:

CITY, STATE WHERE HEADQUARTERED:

IF A COMPANY, IS IT ☐ PUBLICLY HELD? ☐ PRIVATELY HELD?

ANNUAL REVENUES:

INDUSTRY:

NAME OF BUSINESS UNIT OR ORGANIZATION:

CITY, STATE WHERE LOCATED:

NUMBER OF EMPLOYEES AT BUSINESS UNIT:

2. ENTRANTS

NAME OF ENTERING BUSINESS-UNIT EXECUTIVE:

TITLE:

NAME OF DIVISION, DEPARTMENT OR UNIT:

ADDRESS:

CITY:

STATE:

ZIP:

TELEPHONE:

()

FAX:

()

NAME OF ENTERING I.S. EXECUTIVE:

TITLE:

NAME OF I.S. ORGANIZATION:

ADDRESS:

CITY:

STATE:

ZIP:

TELEPHONE:

()

FAX:

()

3. SUPPORTERS

Please list four people who are willing to be interviewed with regard to the system, its development, its use and the value returned. At least one should be a member of the technology team that developed the system and should have played a significant role. At least one should be a primary user from the sponsoring business unit. The other two may be from either organization or represent

suppliers, customers or others intimately familiar with the system.

A. NAME:

TITLE:

TELEPHONE:

()

REASON FOR INCLUSION:

B. NAME:

TITLE:

TELEPHONE:

()

REASON FOR INCLUSION:

C. NAME:

TITLE:

TELEPHONE:

()

REASON FOR INCLUSION:

D. NAME:

TITLE:

TELEPHONE:

()

REASON FOR INCLUSION:

4. THE NOMINATED ORGANIZATION

Please tell us about your organization (company, business unit, agency) in 500 words or less. Include information on:

- when the organization was founded;
- mission statement;
- major products and services;
- markets served;
- any other data you believe to be relevant in terms of general background.

5. THE NOMINATED SYSTEM

Tell us about the nominated system and demonstrate its importance to the organization by completing the following sections. Please limit your material to five pages.

- **Objectives:** Identify the primary business objectives of the IT investment.
- **Scope and Impact:** Identify the functions (e.g., customer service, manufacturing, planning) that were changed by the system, the nature of those changes and their impact on the business. Identify other business-change initiatives tied to the IT investment.

- **Furthering Strategic Objectives:** Describe how the technology investment is furthering the organization's strategic objectives, including any new business initiatives. Note any significant event that would help us evaluate the nominated system's value. Examples might include a merger, a new distribution channel or a significant regulatory change.
- **Partnership:** Describe how the business unit and IS organization worked together throughout the project—from concept to implementation. What were the specific tasks fulfilled by the business unit? IS organization?
- **The Importance of IT:** Identify the different components of the overall business change (e.g., business reengineering, downsizing, cycle times). Explain the importance of the IT component to the overall business change. Could the results have been achieved without IT?

6. TECHNICAL PROFILE

Briefly describe the technology of the nominated system. Please include the names of major vendors and products. If you prefer, you may attach a document containing a technical description of the system, providing it is no more than five pages.

NOTE: The examples provided here are meant to be illustrative, not all-inclusive.

- **Architecture** (e.g., client/server, distributed, main-frame)
- **Hardware** (e.g., mainframe/parallel processor, minicomputer/server, desktop computers, handheld/portable devices)
- **Software** (e.g., operating systems, database system, shells, application software)
- **Software development tools** (e.g., CASE, 4GLs, GUI developers, object-oriented development tools)
- **Networking/communications hardware, software and services** (e.g., modems, routers, electronic-mail packages, carriers and public networks)

7. TRUTH OF INFORMATION/RELEASE

The following release must be signed by both nominating executives if the application is to be considered. Unsigned releases will invalidate the entry.

I hereby state that the information provided is true and complete to the best of my knowledge and belief.

I authorize the release and use of, in connection with the ESPRIT Awards program, any and all materials furnished by me or others at the company contacted for this judging. I understand that information submitted on this application or subsequently gathered during the evaluation and judging process may be used in articles or any other type of publicity relating to the ESPRIT Awards program.

I also authorize the release and use of my name, my company's name and my likeness, including but not limited to any photographs and any recording of my voice or image that may be taken of me for CIO Magazine. I agree that no compensation shall be due me or my company for such usage.

I recognize that failure to meet these conditions or to provide sufficient material that can be published can cause the application to be rejected at any point in the process at the sole discretion of the sponsors.

SIGNATURE OF NOMINATING BUSINESS EXECUTIVE:

DATE:

SIGNATURE OF NOMINATING I.S. EXECUTIVE:

DATE:

8. OTHER EDITORIAL OPPORTUNITIES

If you are not selected as an award recipient, are you willing to be contacted for inclusion in other articles in *CIO Magazine*? Yes ☐ No ☐

How did you learn about the ESPRIT Awards program?

- | | |
|--|---|
| ☐ CIO Magazine | ☐ Academician |
| ☐ Booz-Allen & Hamilton | ☐ Consultant |
| ☐ IS staff member | ☐ Systems integrator |
| ☐ Other publications | ☐ PR Agency |
| ☐ Vendor | ☐ Advertising Agency |

☐ Other (please identify) _____

C H E C K L I S T

Have you filled out...?

- ☐ Company/Business-Unit, Entrants and Supporters Information
- ☐ Return on Investment Chart

Have both entrants signed and dated...?

- ☐ Truth of Information/Release

Have you included on separate pages...?

- ☐ Nominated Organization
- ☐ Nominated System
- ☐ Technical Profile
- ☐ Additional Return on Investment Material

Have you checked off...?

- ☐ Other Editorial Opportunities
- ☐ How you learned about the ESPRIT Awards program?

9. QUANTIFYING RETURN ON INVESTMENT

Directions

- The table below provides a framework for identifying costs and benefits. Feel free to break down any line item into additional components, or to add new line items if necessary. Please explain how the figures were arrived at, on separate sheets if necessary.
- In quantifying costs and benefits, every effort should be made to quantify strategic and "intangible" benefits (e.g., competitive positioning, risk management). It would be helpful to attach any documents you have prepared that explain the system's costs and benefits.
- You may also include your own return on investment calculations and frameworks to further explain your return on investment. These can be attached to your application form.

Guidelines for Quantifying Return on Investment

- Provide return and investment figures five years out from initial implementation. If the system has been in operation for less than five years, you may project future investments and returns *based on historical data*.
- All investments and expenditures made before implementation should be included in year "zero."
- Distinguish actual costs and benefits from projected costs and benefits.
- To the extent the nominated system replaced older technology, the system investment reflected in the tables should be net of corresponding salvage values and ongoing costs.
- Return and investment figures should be stated on an approximated after-tax basis.

NOTE: The examples provided below are meant to be illustrative, not all-inclusive. All numbers are subject to verification.

Investment:	Year "0" 19__-19__	Year 1 19__	Year 2 19__	Year 3 19__	Year 4 19__	Year 5 19__	TOTAL
Technology purchases (e.g., hardware, software, lease payments, amortization)							
System development and implementation (e.g., systems integration and consulting fees, initial training)							
Ongoing system maintenance and enhancement (e.g., updating system, maintaining and replacing software, adding users)							
Ongoing system operations (e.g., ongoing training and consulting, help desks, other ongoing support)							
Nonsystems operational charges (e.g., increased labor or inventory, early retirement program for laid-off employees)							
Total Annual Investment	\$	\$	\$	\$	\$	\$	\$

Total Investment: \$

Return:	Year 1 19__	Year 2 19__	Year 3 19__	Year 4 19__	Year 5 19__	TOTAL
Incremental profits from enhanced revenue (e.g., new revenue streams, productivity improvements)						
Reduced operating costs (e.g., labor, material)						
Reduced capital investments (e.g., capital equipment)						
Reduced inventory						
Indirect cost avoidance (e.g., avoided hiring, fines, fees)						
Total Annual Return	\$	\$	\$	\$	\$	\$

Total Return: \$

Total Return on Investment: \$
(Total Return minus Total Investment)

1993 ESPRIT Award Winners

AT&T Universal Card Services

Marian Browne, *Vice President,
Customer Relationships*
Leslie Palmer, *Vice President,
Emerging Technologies*

City of Chicago, Bureau of Parking

Judith Rice, *City Parking Administrator,
Bureau of Parking*
Paul Vallas, *Director of Revenue,
Department of Revenue*

Complete Health Services Inc.

William W. Featheringill, *President & CEO*
Richard Harley, *Director of MIS*

Los Angeles County, Department of Public Social Services

Ray Garcia, *Bureau Director,
Bureau of Administrative Services*
Lisa Nunez, *Division Chief,
Computer Services Division*

South Florida Water Management District

John Lynch, *Department Director,
Information Systems*
James D. Yager, *Assistant Executive Director*

SynOptics Communications Inc.

John Dick, *Chief Information Officer*
William J. Ruehle, *Vice President & CFO*

ESPRIT Awards sponsored by



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and

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IF YOU ONLY ATTEND ONE NETWORKING EVENT THIS YEAR, THIS IS THE ONE



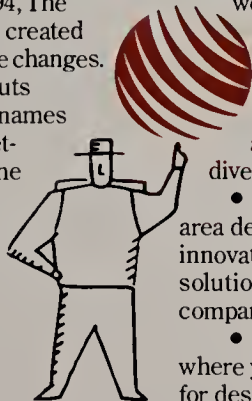
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- *Start-Up City™*, an exhibit area dedicated to showcasing innovative new products and solutions from emerging companies.
- *Configuration Clinic™* where you can get suggestions for designing and configuring

your network from the best in the business.

- *CNEPA Labs*, a forum for the transfer of technical information from the vendors to the network computing professional.
 - *TSANet*, where Technical Service Alliance members join together to solve your biggest networking challenges right on-the-floor.
 - *Solutions Showcase™ Demonstrations*, cooperative technology demonstrations by leading vendors including ATM, APPN, Fast Ethernet and Multimedia.
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For more information and details on how to attend FREE (a \$50 savings), or to become an exhibitor, call 1-800-488-2883 Extension 211.

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Outward Bound

Futures benchmarking encourages companies to look not just outside themselves but outside of their corporate mind-sets to identify new, quickly achievable revenue sources

BY THORNTON A. MAY

In 1970, Alvin Toffler coined the term "future shock" in the title of a book describing the disorientation and stress people and organizations experience when they try to cope with too many changes in too little time. *Future Shock* focused on the breakdown, both personal and institutional, in the ability to make intelligent, adaptive decisions.

History has shown CIOs to be particularly susceptible to this syndrome when it comes to planning. But leading-edge organizations are trying a new approach—futures benchmarking—as an alternative to dated and dysfunctional planning methodologies. The goal of futures benchmarking is not to simply forecast the future but to prepare for it. By getting information technologists to look beyond the immediate concerns that consume the vast majority of planning resources today, futures benchmarking can serve to inoculate the organization against future shock.

IS executives want a planning methodology that is dynamic, quickly implemented, strategic, future-focused and money-oriented. The methodologies that emerged from American business schools during the '70s and '80s fall miserably short of these criteria. By contrast, futures benchmarking stresses the actionable; leverages the knowledge of participants inside the value chain; creates new relationships with players outside the traditional value chain; occurs in a compressed time frame (approximately 90 days); and creates new and relatively immediate revenue sources.

How does futures benchmarking differ from traditional benchmarking? While both address the self-absorption of internally focused organizations, traditional benchmarking does not always get companies to refocus on the right things. Many shift their focus externally only to have that focus zoom in on a mirror image of themselves. Recall that Compaq Computer Corp. began its initial slide by mistakenly benchmarking performance against IBM Corp. As Compaq Chairman Ben Rosen observed, "What we didn't realize was the company we were measuring against was also losing market share."

Futures benchmarking has the same starting point as traditional benchmarking: the codification of best practices in the existing business and the establishment of relevant benchmarks. But futures benchmarking considers best-in-class practices and knowledge outside the traditional value chain and forges relationships that create value in new ways. Futures benchmarking is to traditional benchmarking what intelligent character recognition (ICR) is to optical character recognition (OCR)—a more-powerful tool that not only matches and then copies patterns but also identi-

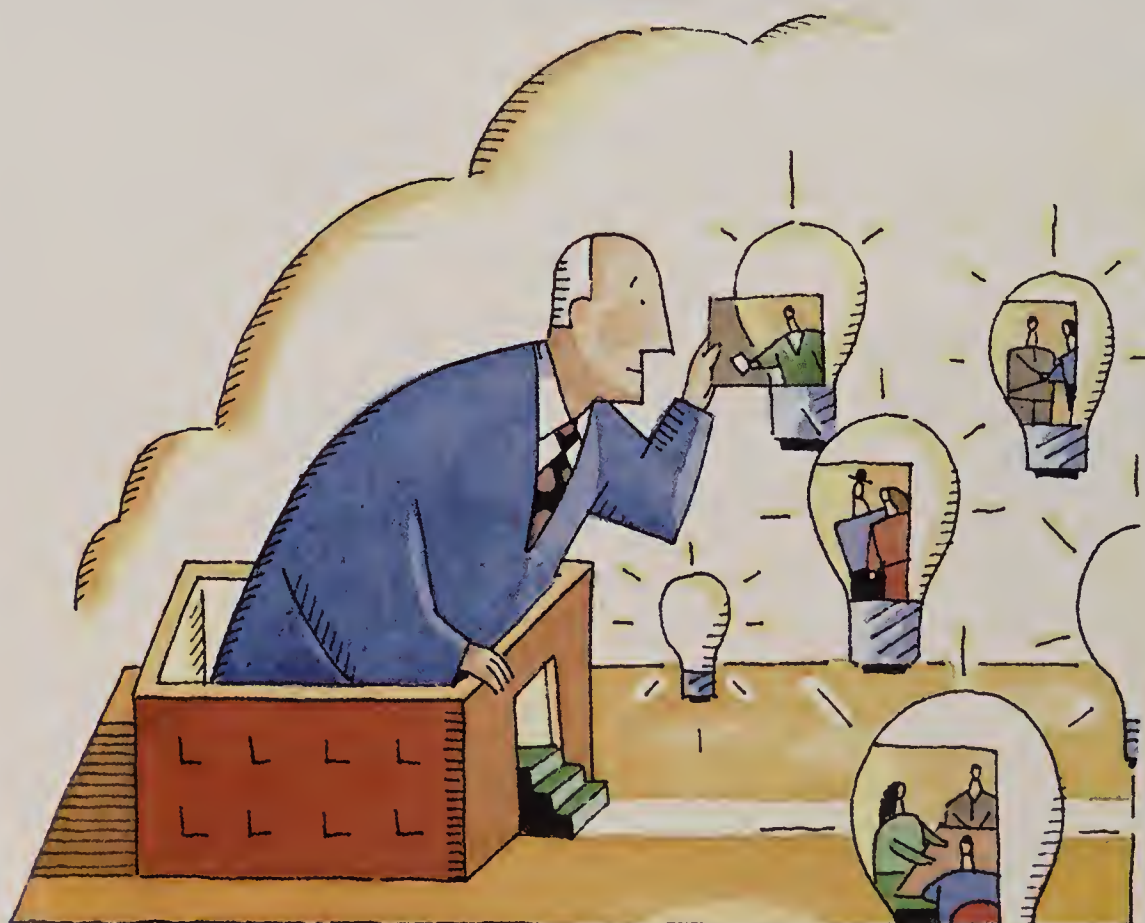


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fies the underlying value-capture schemes and uses them to create high-margin opportunities.

There are five major steps involved in futures benchmarking:

- Find the right problem or issue on which to focus.
- Look beyond the boundaries of the organization.
- Look at where money is spent and made in your organization (and in others).
- Focus on the actionable and articulate what can be done.
- Get busy implementing prototypes that will save or create revenue.

Consider this example. Senior IS managers involved in strategic planning at a major financial-services firm concluded that migrating from aging legacy systems was their top priority. Rather than embarking on this frightening initiative alone or locking themselves into a single vendor or systems integrator via a multiyear, multimillion-dollar contract, however, the managers began looking outside the company and identifying other firms struggling with similar issues. They talked to organizations that had just completed the migration of some subset of their applications portfolio; organizations involved in "change-it-all" initiatives; and—recognizing that not all the best ideas are those already implemented—organizations that were still in the planning stages.

Over 45 days, a group of senior managers visited the chosen companies and discussed the legacy-systems issue with their counterparts there. The talks revolved around where money was being spent and where benefits were being captured; they established what competencies *had* to be present for any migration endeavor to be successful.

The financial firm came away with a much more-focused understanding of the costs, resource requirements and potential paybacks of migration programs. Subsequent brainstorming sessions synthesized this data into a map showing where money could be saved and/or generated. The managers then produced a list of action points that the firm could undertake to reduce costs, accelerate the migration timetable and increase the

project's payback.

While these discussions clarified the firm's thinking about what had to be done, the issue remained: with what resources? The firm lacked the in-house skill set to perform best-practices legacy migration. Nor did it have the money to acquire those resources from systems integrators. Instead, it created a special relation-

**Futures benchmarking uses
"hot" (live and real-time)
sources such as discussions
with managers and candid
end users in other
companies.**

ship with a value-added reseller (VAR) that had most of the required skills. Working with this very visible money center proved an excellent marketing opportunity for the VAR, which also shares in the economic benefits emerging from the work. For its part, the financial-services firm gets the resources it needs in the required time frame and at a wholesale price. Total elapsed time to execution on the first set of applications migrated was about 95 days.

You'd be surprised at how easy it is to take the plunge into futures benchmarking. Enlist the help of a colleague with whom you are collaborating on a project team. Together, select external organizations: These should be companies that you respect, that exist in or around your immediate value chain and that are wrestling with issues similar to yours. Use your combined personal contacts to network inside the target companies and find those individuals working on similar problems. Hold a meeting where your companies share perspectives on the issue. Then go back to the project team with what you have learned. Repeat the process with a broad array of organizations.

Strategic-planning initiatives in

the IT area frequently rely on information collected by low-level staff from published materials. But such information is at best derivative. It is cold, impersonal and removed from the human decision-makers who really matter. By contrast, futures benchmarking uses "hot" (live and real-time) sources such as discussions with managers and candid end users in other companies. In addition, IS executives can look to knowledgeable consultants and even researchers in vendors' laboratories—as long as they are out of earshot of the marketing and sales departments.

Contemporary planners must raise their eyes from day-to-day issues and the tyranny of their markets. How much of your time is spent dealing with internal problems? How much is spent externally with suppliers/customers of current products/services? And how much is spent where the real payback occurs—creating revenue-producing opportunities?

A supplier of consumer nondurables was focused completely on complying with the technical mandates of one of its primary retailers. A futures-benchmarking exercise revealed that the supplier's margins could be improved not through mere compliance with technical requirements but rather through intervention in the retailer's value chain. This insight surfaced only when the supplier talked with other suppliers to this particular retailer.

Futures benchmarking defines external not just as outside the company but as outside the company's mind-set. It reaches beyond the organization and examines the revenue streams that others have identified and exploited.

With 90 percent of the process conducted outside the boundaries of the company, futures benchmarking tears away the organizational blinkers that prevent so many companies from looking beyond the here and now. It airlifts you out of the dead-end street of day-to-day concerns and drops you in the more-productive realm of revenue creation. 

Thornton A. May is director of research at Tenex Consulting in Burlington, Mass.

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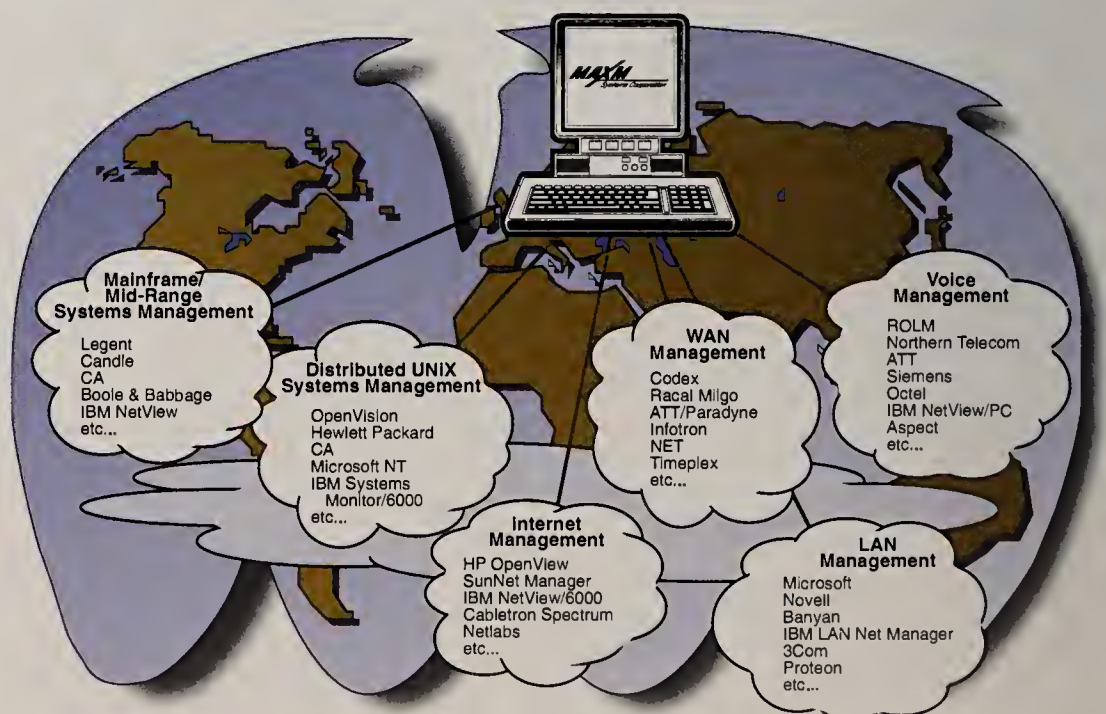
gives you a consolidated, integrated view of all the elements and management systems in your enterprise—on one powerful, centralized workstation, which can then be distributed as directed. It can automatically perform scheduled tasks—and automatically respond to network and systems events—that affect the overall efficiency of your enterprise systems.

As your company moves toward today's powerful new client/server architectures while managing existing complex, multi-vendor systems and network configurations, you're facing challenges that were unheard of just a few years ago. As the most powerful AEM technology on the market today, MAXM will help you meet those challenges, so that you can enjoy the benefits of

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Since implementing MAXM, this corporation has increased the scope and number of its global financial services while decreasing the number of its worldwide technical support centers. It now has a single point of control for viewing its diverse technical operations—including SNA links, LANs, the company's private network, and the networks of outsource vendors. Not only have the eleven operations centers

been consolidated into a single staffed facility in Delaware and a "lights out" facility in New York, but the enterprise network now supports three times as many applications as before. A consolidated user help desk, which now responds to 95% of all calls for assistance without escalation, is staffed around the clock. With MAXM, operators can automatically check important systems at, say, 2:00 a.m. daily. Problems with applications and other key systems can be resolved automatically, and MAXM alerts an operator whenever intervention is needed—so that problems can be resolved before the workday's mission-critical operations get underway. MAXM's AEM capabilities have helped this customer reduce the volume of incoming system alert messages by more than 80%. AEM collects, filters, and prioritizes messages and alarms from dozens of different management facilities.

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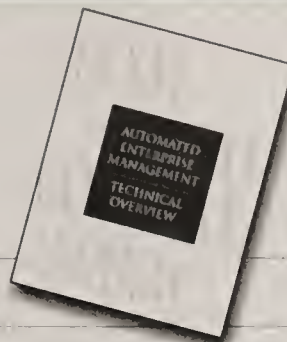
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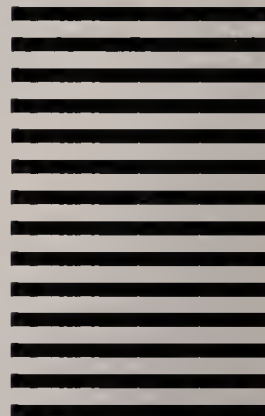
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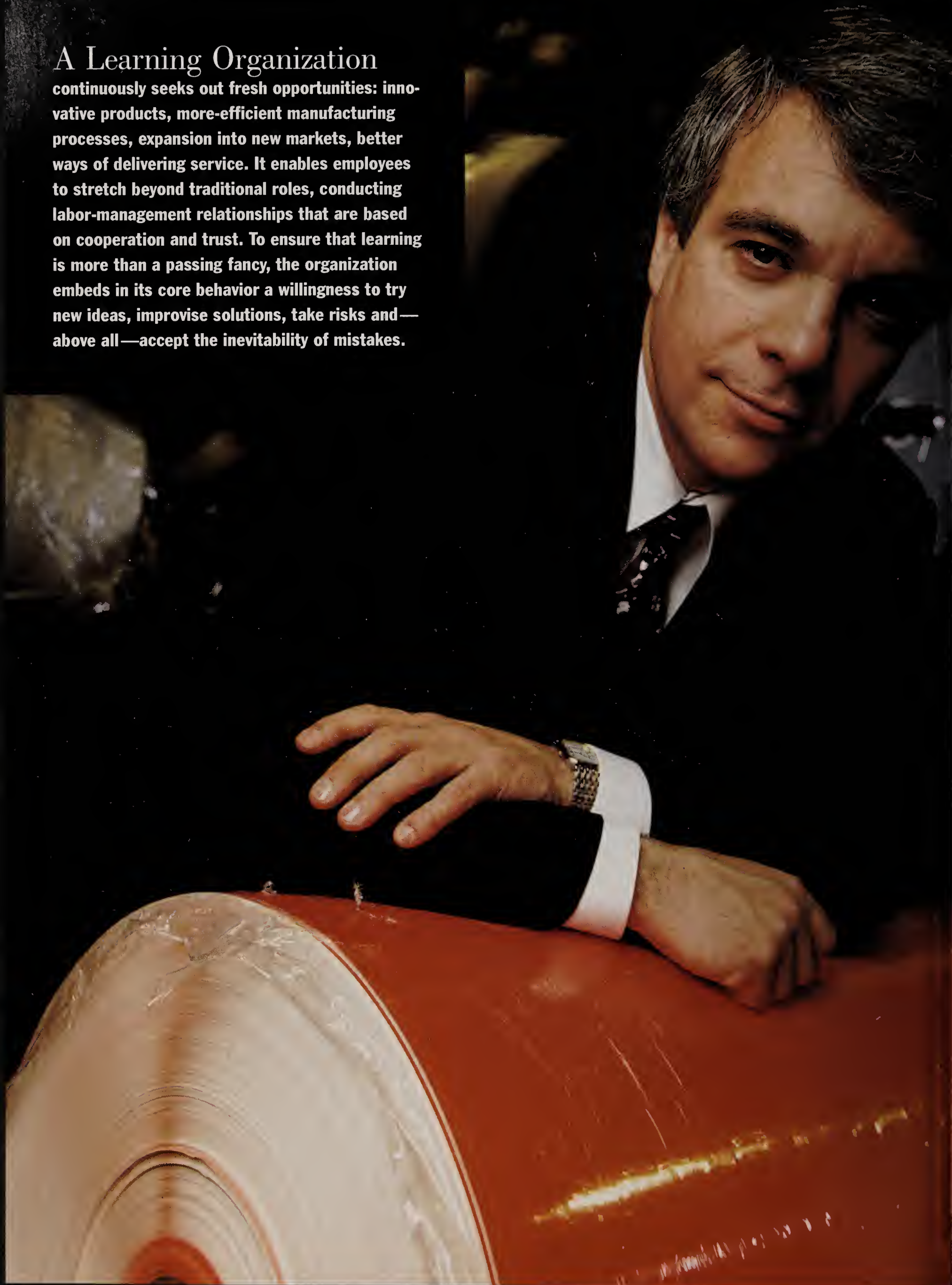
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A Learning Organization

continuously seeks out fresh opportunities: innovative products, more-efficient manufacturing processes, expansion into new markets, better ways of delivering service. It enables employees to stretch beyond traditional roles, conducting labor-management relationships that are based on cooperation and trust. To ensure that learning is more than a passing fancy, the organization embeds in its core behavior a willingness to try new ideas, improvise solutions, take risks and—above all—accept the inevitability of mistakes.



T H E LEARNING TREE

When Robert A. Fulton founded Web Converting Inc. in 1969, he envisioned a company that would be committed to enriching the lives of its employees as well as to earning a profit. Specifically, Fulton wanted his company to encourage personal learning and creativity among employees.

An autodidact, Fulton believed that reading books, sharing ideas and promoting personal growth would have a positive impact on Web's workers and, consequently, on its bottom line.

Ironically, Web's growth over two decades, from a basement location in 1969 to five regional plants scattered across the country today, undermined these convictions. The company succumbed to bureaucratic tendencies and adopted a command-and-control managerial structure consisting of bosses who gave orders and workers who followed them. The hierarchy that evolved proved hardly conducive to learning.

Web Converting (under the aegis of its holding company, Web Industries Inc., based in Westborough, Mass.) is in the business of custom conversions—modifying such flexible materials as film, plastic, aluminum foil and fabric to the exacting specifications of its customers, many of them Fortune 500

BY MEGAN SANTOSUS

STORYLINE

When an organization whose business is by its very nature improvisational adopts an enterprisewide strategy of continuous learning, the result is something like Web Converting Inc. Web's confident flexibility has enabled it to take on jobs that scare competitors away. The company—which converts a variety of materials to its customers' exacting specifications—set out to become a learning organization long before that strategy earned its vogue status. In part, this happened because Web is an organization that may have been born to learn: Its founder, Robert A. Fulton, was a firm believer in employee enrichment as a viable pathway to profitability.

CHARLES EDMUNSON:
"Building a culture of continuous and shared learning is the best way to Web for the future."

Forming the backbone of Web's learning commitment are self-directed work teams, weekly reading groups, open financial statements, TQM training, meetings with end customers and courses in interpersonal skills.

manufacturers. All told, its five plants bring in \$20 million in annual revenues, converting materials into such familiar items as drawstring handles for garbage bags, tear tapes for candy wrappers and labels for clothing. The machines that Web uses to slit, cut and wind materials require rapid conversion themselves to meet specifications that change with virtually every job.

"We don't invent a product that we market to our customers," explains Web Industries Vice President

markets."

In fact, many customers have their own converting facilities and turn to Web only when a special need arises. So Web must actually compete with its customers for business as well as with other third-party converters. That's why constantly seeking new ways of doing things is deemed so essential.

"In our competitive environment," says Edmunson, "we have to be improving constantly because better, faster and cheaper wins."

Charles Edmunson. "We position ourselves to be there when other manufacturers need us to increase their production capacity, convert a special material or expand into new

In 1985, Fulton implemented an employee stock-ownership plan (ESOP) to provide employees with a financial incentive to work hard and invest themselves in the company. However, management soon realized that the ESOP could offer no competitive advantage unless employees were made to feel, think and react instinctively as business owners.

And that's what led Web to adopt the principles of organizational learning—even before Peter M. Senge wrote *The Fifth Discipline*, his seminal book on the subject.

"The two concepts of employee learning and employee ownership started separately," says Edmunson, "but when they finally came together in 1989, we started to transform the company."

As Web continued expanding and Fulton's retirement neared, managers from each plant established a cultural framework to ensure that his ideals would remain at Web long after he did. (Fulton is no longer involved with daily operations.) "Now, we're moving toward meaningful employee ownership where learning is institutionalized and people have a reason to care and invest themselves," says Edmunson.

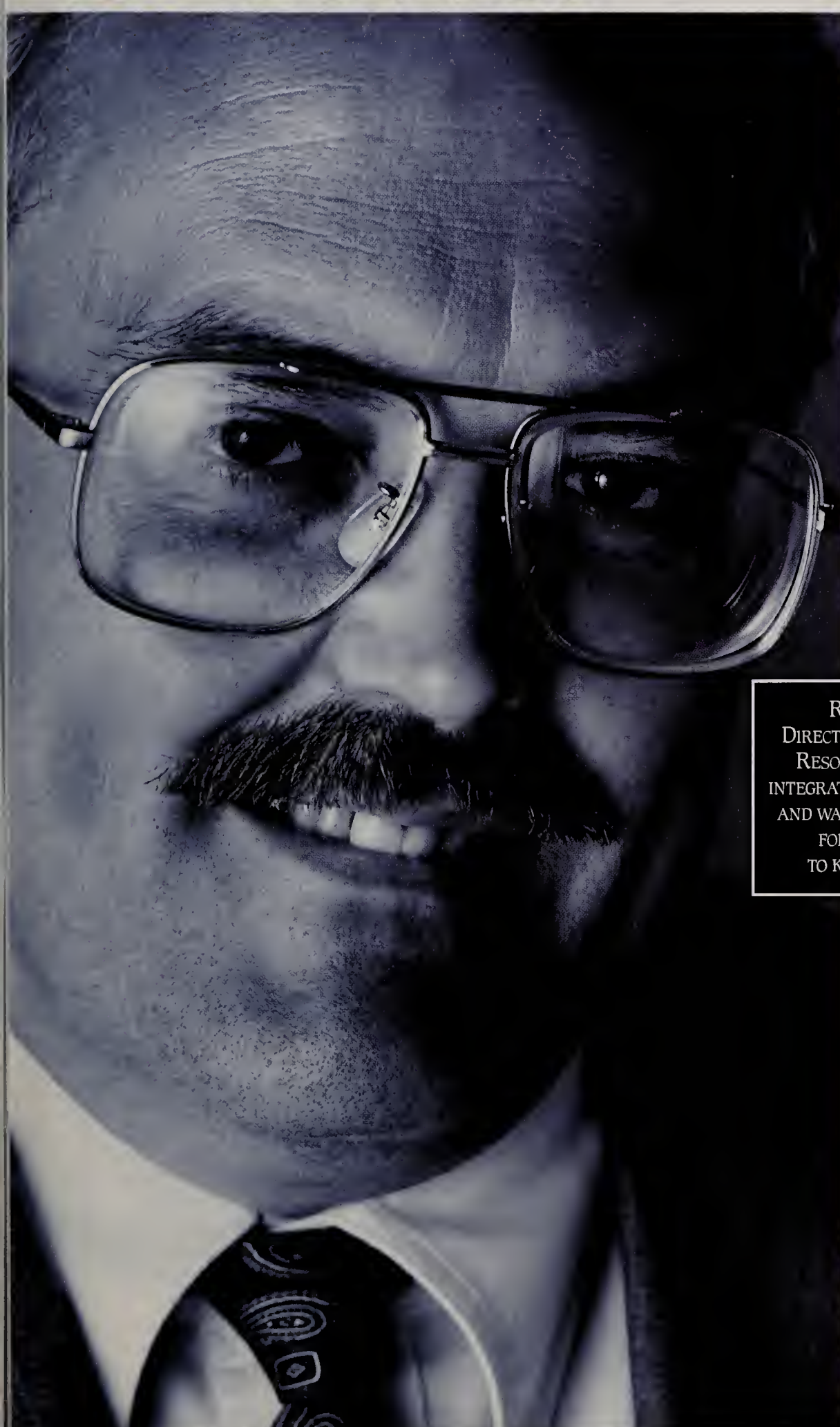
FORMING THE BACKBONE of Web's learning commitment are self-directed work teams, weekly reading groups, open financial statements, total quality management (TQM) training, meetings with end customers and courses in interpersonal skills. But reorganizing employees into teams and expecting them to act like owners works only when everyone has the appropriate training, education and information (see story, Page 34).

Web has taken steps to give employees the perspective to make informed deci-



CAL AREY: "Talking or meeting with our customers gives us a closer feel for the work we're doing."

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sions. For example, the same three-page financial statement that was seen by only a few managers is now distributed to everyone during monthly meetings. Although at first many employees did not understand the numbers, sharing the financial information has generated an ongoing dialogue to the point where most people are aware of expenses and of how their own work and decisions affect profits.

Dave Turner, a former production manager at Web's plant in Framingham, Mass., who now serves as a technical adviser, has noticed an appreciable improvement in the way employees use supplies and equipment. "Before, a \$30 roll of tape would be stepped on or misplaced," he says. "Now that people are aware of what things cost, they are a lot more careful, and we've been saving money all over the place."

As part of Web's customer-focused strategy, all employees are encouraged to meet with customers, either in the field or at the plant. Edmunson and his colleagues agree that such meetings yield new insights and ideas for improving customer service. "I have a lot more customer contact than I had before," says Cal Arey, who leads the spooling-machine team in Framingham. "Talking or meeting with our customers gives us a closer feel for the work we're doing." And since the teams set their own production schedules, this sort of contact helps them remain aware of customer expectations.

Through membership in a nationwide association of ESOP companies, Web employees regularly meet with their counterparts elsewhere to trade innovative ideas. Edmunson believes that networking with other employee-owned organizations gives workers valuable insight into the economics of running a business. In addition, formal training in TQM provides an overall perspective on what it takes to be competitive.

As roles have changed, everyone has needed to acquire new skills and knowledge. When Turner was a pro-

duction manager, for example, he was responsible for purchasing and distributing supplies. Now those duties have been delegated to the team he advises, and Turner is required to listen to its members, encourage them to take the initiative and provide ongoing support. In his previous capacity, he says, "I was the answer man"; he used to spend hours

solving problems on his own. "But now I give the team free rein to try their own ideas. There have been varying degrees of stress on everyone," he admits. "The team has taken on a lot of my old responsibilities, and I've learned to let them handle any problems."

"We're trying to create a company where workers are really business-

Where the Team Curls Up with a Good Book

At Web, old hands invest in the future by helping to train new hires and invest in themselves by reading aloud from business books

Traditionally, "we weren't very good at training," concedes Charles Edmunson, vice president of Web Industries Inc., parent company of Web Converting Inc. "We hired entry-level workers off the street, and by the time they joined us, we probably needed them two weeks ago."

The lack of a formal training program was acceptable at Web until 1989, when the company adopted principles of employee ownership and continuous learning. "We wanted to create an environment of shared values, where people have the same way of looking at the world—at least while they're at work," Edmunson says.

As a result, the company developed an orientation program consisting of 20 one-hour modules taught by employees. Topics include the fundamentals of Web's business, customer expectations, reading work orders, packaging standards and basic math skills. The module on maintenance awareness covers the costs of machine parts so that employees have an appreciation of expenses.

Because 30 percent of Web is now owned by employees through an employee stock-ownership plan, Edmunson believes it's important to involve workers in training new hires. "People in the plant are invested in the success of the new employee," he says. "It's also a good way for new employees to get to know a lot of people in a hurry."

The training program is the new employee's first taste of the company's ongoing learning process. That process continues in a variety of activities. Each week, for example, machines are shut down for an hour so that operators can get together and read management books. Among the favorites are *Leadership is an Art*, by Max De Pree; *The Fifth Discipline*, by Peter M. Senge; *The Great Game of Business*, by Jack Stack; and *Moments of Truth*, by Jan Carlzon. Web has found that reading aloud in groups enables people to share ideas and engage in lively discussion. "I never read a business book in my life before coming here," says spooling-team leader Cal Arey, "but now I'm learning much more than I ever have."

—M. Santosus

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Mike Quintero



Don Black

code and as a result, easily enabled their existing applications to be moved to target environments.

But rather than just blow our own horn about the IEF for Client/Server, we asked Mike Quintero, Manager of the Development Center, Data Administration and Design at Blue Cross and Blue Shield of Florida, and Don Black, Business Systems Consultant of Union Pacific to join in.

Mike: "We had all the hooks up in one week and it only took one more week to build the application and generate code. It was a snap."

Don: "I believe our success with this project is a tribute to the capability of the IEF and Texas Instruments in helping us quickly develop powerful building blocks and redeploy them as required to meet our evolving needs. TI supports everything you need for a major project and walks you through each step in a logical, integrated manner."

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Blue Cross and Blue Shield of Florida developed a document creation application that would allow users to pull data from a mainframe host down to a PC platform for inclusion in a WindowsTM environment.

They needed the ability to "right-size" the application to fit their business needs today, while also ensuring flexibility for future business needs.

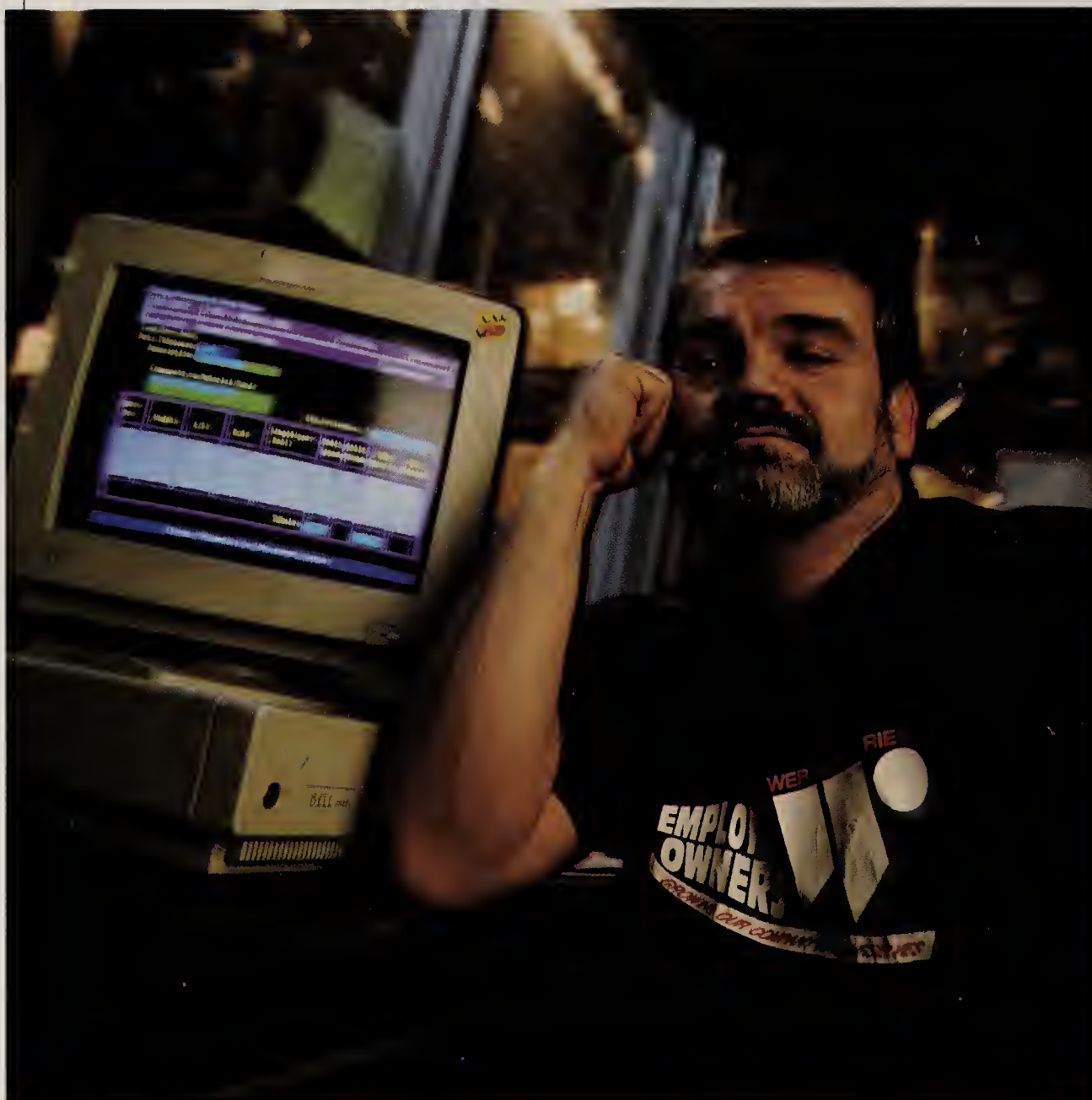
The IEF for Client/Server allowed them to concentrate on gathering information and developing business models without being distracted by technology concerns. They got the application they needed, when they needed it, and the added plus of some very happy end users.

Union Pacific Railroad developed a track inventory system to capture information about their track assets, such as where the track is located, what railroad owns it and who's responsible for maintaining it. They were looking for a solution that was compatible with existing systems and wanted support through their entire development process.

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DAVE TURNER: "I give the team free rein to try their own ideas."

people," explains Edmunson. "We want everyone to have a perspective on the business so that no one relies on other people to solve problems for them." That would explain Web's adoption of a participative-management structure requiring everyone to embrace functions that transcend their job descriptions. Thus, learning has become a fundamental part of the company culture. As Web is discovering, learning not only helps

people grow by expanding their horizons; it also enhances the company's competitive position.

"Improving quality and becoming customer-focused is critical to what we're doing," says Edmunson. "In this competitive environment, it's not a question of being smarter but of working harder to please our customers." As he sees it, "building a culture of continuous and shared learning is the best way to prepare Web for the future."

equipment it had ordered for another six months. One of Web's competitors said it needed a year to do the job, according to Edmunson. So the customer contacted Web's Atlanta plant, which agreed to take on the assignment and complete it in the required timeframe.

"We didn't know how to do it," Edmunson says, "but we were confident we could learn."

Machine operators in Atlanta worked with engineers at Web's Dayville, Conn., facility to jury-rig existing machinery. The equipment was then shipped from Connecticut to Atlanta, where a production team carried out modifications until the customer's specifications were met. Everyone worked long hours, but the job was completed on time for a cost of \$75,000.

Edmunson believes that Web's learning environment made the whole thing possible. Production employees worked closely with the cus-

tomer and then collaborated with the engineers to see that expectations were met. By focusing on a common goal and being open to new ideas, Web employees were confident that they could improvise a solution.

"If we had waited to get things right before agreeing to do it," Edmunson asserts, "we would have missed the boat."

Even with the proper structure and empowerment tools in place, becoming a learning organization requires the kind of commitment demonstrated by employees such as Rob Zicaro. A machine operator and assistant leader of the film team at the Framingham plant, Zicaro is responsible for making sure everyone works together to satisfy customers. To this end, team members rotate schedules, set their own hours and switch jobs. "We huddle together every morning for 10 minutes to plan our day," he says. "We try to run our

"Before, a \$30 roll of tape would be stepped on or misplaced. Now that people are aware of what things cost, they are a lot more careful, and we've been saving money all over the place." —Dave Turner

THAT APPROACH HAS already paid off. Consider the example of one Web customer, a large consumer-products company, which needed special fabric cut and wound into jumbo-size spools in six weeks. The company could not get the required \$1 million piece of

“We huddle together every morning for 10 minutes to plan our day. We try to run our team like a minibusiness, handling everything from customer accounts to disciplinary issues.” —Rob Zicaro

team like a minibusiness, handling everything from customer accounts to disciplinary issues.” To create a sense of inclusion and foster participation, information is shared among the team members. Web believes that learning will be reinforced continuously if everyone has the opportunity to contribute to and have an impact on the company.

Information that was once reserved for the eyes of managers only is now distributed freely. Every week, for example, reports that tally up the total sales volume generated by each machine are distributed to Zicaro’s team members. “We never had this information before,” he says. “Now that we know what we have to do each week, we’ve become pretty creative in running jobs.” With teams now solely responsible for making decisions, turnaround times for jobs average less than one week, compared with three to four weeks on average in 1990.

DESPITE ITS SUCCESSSES, Web has hit some rough spots on the road to becoming a learning organization. “We try a lot of different stuff around here, and we’re not always successful,” Edmunson concedes. “But making mistakes and taking risks are what learning is all about.”

As one of four corporate officers, Edmunson is keenly aware that making the transition from a hierarchical-management structure to a team-based, democratized culture

has affected Web’s 250 employees in a variety of ways. Additional responsibilities often bring additional stress to workers, whereas middle managers who relinquish duties may feel insecure about their status. Edmunson says the transition process has been “long, slow, messy and full of emotion.” Yet

on finding solutions and not on personality-bashing. Employees in need of interpersonal and group problem-solving skills have attended Dale Carnegie courses.

Companies interested in following Web’s example should not be dissuaded by the problems. “This is an ongoing process that requires a lot of work and can often be very painful,”



ROB ZICARO embodies the kind of commitment a learning organization requires from employees.

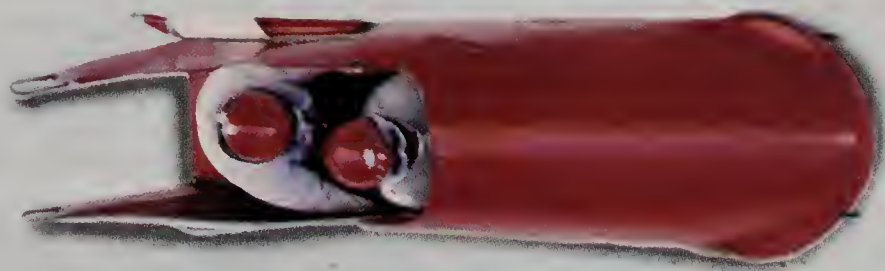
no one at the company can envision a return to the previous command-and-control style of management. “We share the conviction that this is a better way to run a business,” Edmunson asserts.

As part of this new regime, Edmunson actively encourages employees to display emotions and confront one another over divisive issues—as long as the focus remains

Edmunson says. At Web, both the business and individuals are growing, and managers and their employees alike have come to realize that disappointments and setbacks are part of the process. “There are going to be failures and mistakes, and that’s fine with us,” he says. “It’s important to remember that a .300 hitter in baseball doesn’t get on base the majority of the time.” **CIO**

What will keep track
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Designing a Brand New Shoe

At U.S. Shoe, David Dorff's reengineering initiatives are helping revitalize the business. In the process, they've also created a new role and stature for IS.

BY RICHARD PASTORE

THOSE WHO INSIST I.S. EXECUTIVES should sit on the sidelines and implement should not read this article. It will give them conniptions. For as exemplified by David Dorff of United States Shoe Corp., a CIO can lead not just within IS, where Dorff revitalized moribund IS operations, but in the business itself, where

he directed much-needed reengineering simultaneously across three divisions. For his successful navigation through turbulent seas, he was rewarded by those who should have feared

or despised him most, divisional management. They made him one of their own: executive vice president and chief operating officer of the Footwear Group.

U.S. Shoe of Cincinnati has suffered earnings declines in its weaker operations since the mid-1980s but was hardest hit beginning with the 1991 recession. Sales slumped 2.8 percent and profits plummeted 86 percent from 1991 to 1992. Through the first nine months of fiscal 1993, the company reported an operating loss of \$22 million on sales of \$2 billion.

Of the corporation's three divisions, only the Optical Retailing Group has been performing adequately. The Footwear Group and the Women's Apparel Retailing Group suffered from poor merchandising decisions by old-guard management that had lost touch with customers. Much of the blame rests on a lack of decent data: Point-of-sale (POS) and merchandising systems were primitive or nonexistent. For some of the company's retail chains, two-week-old, mailed-in paper receipts served as the sole sales-data point.

UNITED STATES SHOE CORP.

Location: Cincinnati, Ohio

Founded: 1931

Annual Revenues (Year ended 1/31/93): \$2.65 billion

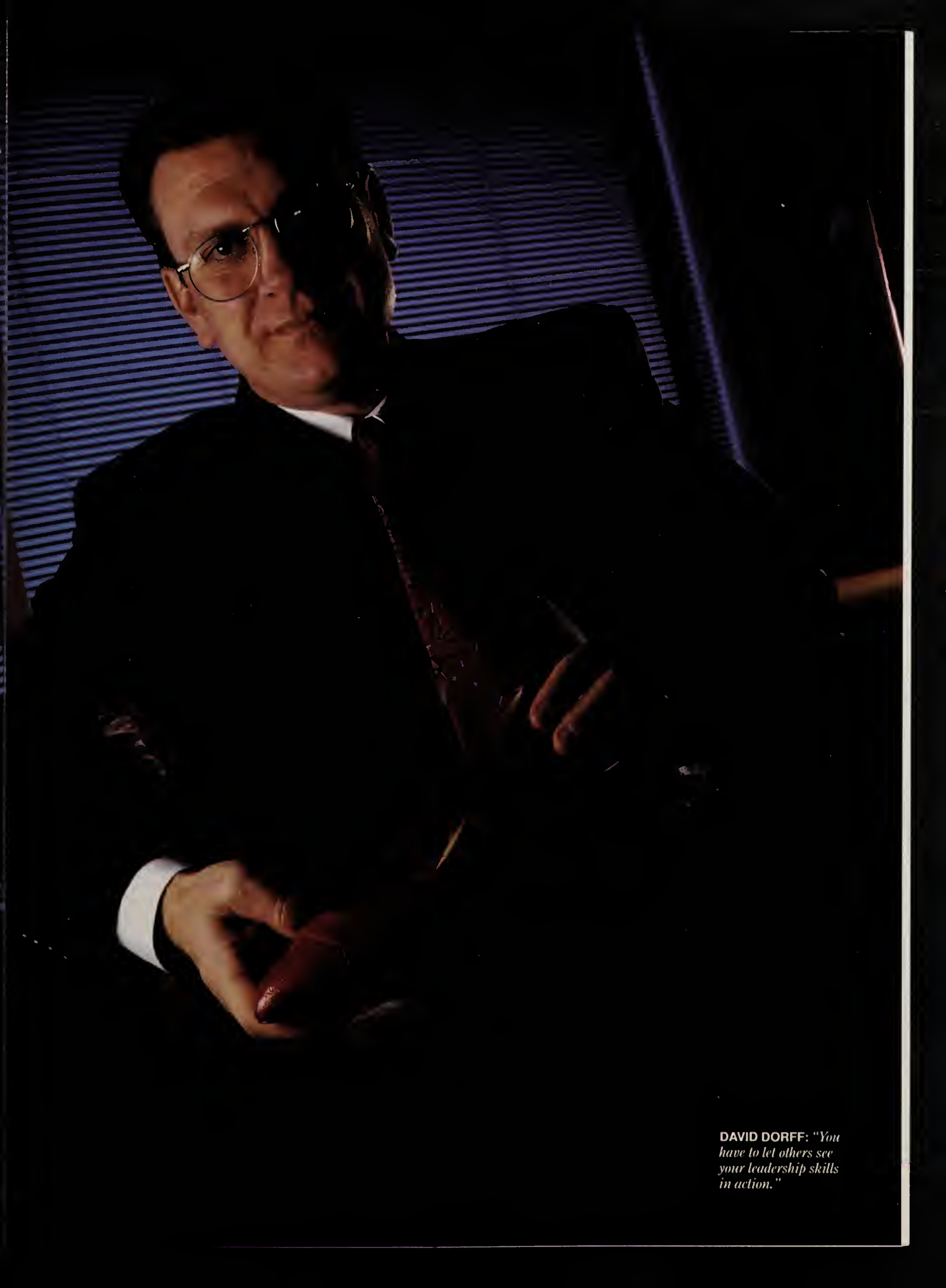
Number of Employees: 40,000

Number of Retail Stores and Leased Departments: 2,468

Divisions: Women's Apparel Retailing Group (Casual Corner, Petite Sophisticate, August Max Woman and other clothing stores)

Optical Retailing Group (LensCrafters and Sight & Save optical stores)

Footwear Group (Easy Spirit, Pappagallo, Cobbie, Banister, and other stores and shoe brands)



DAVID DORFF: *"You have to let others see your leadership skills in action."*



GAR GUNTER: "Our focus shouldn't be selling corporate management on IS."

"They were the Fred Flintstones and Barney Rubbles of MIS in this industry," says Brett Brubaker, who covers the company's financial fortunes for Abraham & Sons in Chicago.

Where was IS during this era of erosion? Good question. There was no CIO; the IS function did not have the status to warrant a chief executive. Management placed little stock in the value of technology. Attempts at system overhauls had miscarried more than once. A commissioned survey in 1990 showed the company had underinvested in IS by millions of dollars compared with the five-year industry average.

Things were destined for change when young guns from Optical Retailing's LensCrafters chain took the corporate reins in 1990: President and CEO Bannus Hudson, 47, and CFO K. Brent Somers, 45. The newcomers purged the corporation of ineffective managers and unprofitable businesses. They knew technology had to be leveraged to solve the merchandising dilemma, and for that IS had to be overhauled. They need-

ed to hire a change agent—a CIO.

David Dorff, 38, had never been in charge of IS. The Harvard University biology graduate had worked in the communications and long-line division at AT&T and in engineering and technical services for DuWayne Peterson at Securities Pacific Automation Co., earning an M.B.A. along the way. From there, he landed a consulting post at Deloitte & Touche in Cincinnati, advising financial, retail and high-tech firms on technology and process redesign.

"My vision was to be a businessperson with a strong background in technology," Dorff says. "I liked seeing things come to fruition and satisfy customers. Pure technologists don't get to see that." Nevertheless, overworked and under-rewarded, he left consulting to try the CIO role on for size.

Stepping into U.S. Shoe, Dorff discovered extremely fragile divisional systems that were "old enough to vote." His first labor was to convince his new bosses to ante up at a time when revenues and profits were withering. By educating senior man-

agement on the value of IT, Dorff "was able to obtain IS capital investment that was an excess of multiples over that of the last two years combined," says Michael Weber, director of Footwear retail systems. "And he maintained that level of investment in a business environment that was rather stressful."

THE IS MAKEOVER BEGAN in the most-crucial area: in-store systems—the Achilles' heel of merchandising. Updating the POS systems enabled the stores to capture customer information such as who is buying, how often they are buying, and what size and color products they are purchasing. This data is essential for better-tailoring merchandise to customer preferences and for micromarketing to specific types of customers.

Dorff's development strategy was to carve everything into bite sizes. "We looked for key initiatives that could quickly demonstrate the value

Tough Shoes to Fill

Without Dorff's strong central authority, can IS at U.S. Shoe maintain its shine?

When the CIO post was created at Cincinnati-based United States Shoe Corp. in 1990, the company needed a strong central figure to make waves in three autonomous IS divisions. With the makeover underway and former CIO David Dorff promoted to COO of the Footwear Group, the need to have someone in that position is open to debate.

"When David came aboard, IS needed a cohesive structure and strategy," says Michael Weber, director of Footwear retail systems. "He

IS could bring," he says. In the Footwear Group, for example, two past attempts to implement all-encompassing retail systems ran afoul of vendor snafus and unsupportive management. Dorff broke down the megaproject, beginning with the POS technology. Then he worked backward from the point of customer contact to merchandising platforms and financial software. Now two years into the five-year overhaul, Footwear is looking at order, shipping and billing systems and next will deal with manufacturing and purchasing. By breaking projects down into six-to-nine-month bites at all three divisions, Dorff also made the costs easier to swallow and helped identify project owners.

As momentum mounted and pieces fell into place, IS's credibility grew throughout U.S. Shoe. "Dave did a tremendous job raising the profile of IS with divisional and corporate executives," says Gar Gunter, vice president of information services at

Optical Retailing's LensCrafters. "He established a strong relationship at the divisional CEO level and got personally involved in international projects for us."

*"A good manager
has to know when
to say no."*

—David Dorff

But Dorff also took away some of divisional IS's autonomy. He instituted a corporate spending-review process and insisted on involvement in IS hiring across the corporation. "They weren't used to coming to me to explain why they wanted to spend money on capital projects," Dorff says. But developing strategic IS

worked diligently to develop communications and standard procedures between divisions, and he strengthened the IS leadership." With that accomplished, "the need for his replacement is less than it would have been."

When Dorff left the post in 1993, the corporate director of technology planning and management took on oversight of investment decisions and facilitation of synergies among IS divisions. But that position does not pack the authority of a CIO. And without a strong CIO-type patriarchy, the push for synergies could falter. "I've never seen it happen without a central authority," notes Donna White, vice president of Footwear MIS.

Substantiating this concern, an interdivisional group of IS executives that met regularly to share strategies and best practices fell by the wayside when the CIO post was vacated. "Dave was the organizer and leader, and when he left there

was no one to pick it up," says Vicki Hudson, director of information technology planning and management. The group is now re-forming with CFO K. Brent Somers in Dorff's role.

Without a CIO to champion information technology, divisional IS would have to assume that mantle or risk losing its top-executive patronage and resources. "Long term, without a position like that, the support and credibility that has been put in place with Ban [President and CEO Bannus Hudson] and Brent [Somers] will have to be carried on by the divisional IS people," says Gar Gunter, vice president of information services at the firm's Optical Retailing Group. "But our focus shouldn't be selling corporate management on IS. It's making sure we serve our divisions' management."

As of the start of this year, the company reported it has no plans to either fill or eliminate the position.

—R. Pastore

with limited resources required this corporate oversight, he reasons. The approach was validated by contract savings—95 percent of vendor contracts were renegotiated to leverage the newly combined buying power of the divisions.

Critics might accuse Dorff of not going far enough, however. The divisions' historical autonomy has created an endemic lack of standards and system redundancies that have yet to be addressed. The Footwear Group even had multiple general-ledger systems among its retail chains. "When you have that kind of autonomy, it's hard to reel them back in," says Vicki Hudson, director of information technology planning and management in U.S. Shoe's corporate office. "Everyone feels they're so unique." Clearly there are redundancies in payroll, human resources and financial systems that could be eliminated, she says. "It wouldn't necessarily save money, but it would free up some IS staff to focus on more-competitive systems."

Dorff agrees with the principle but gave it low priority as CIO. "We had a variety of strategic systems we were trying to update that were of higher value, and you can't do everything at once," he explains. Nothing would have destroyed IS's credibility more than overcommitting itself and failing to deliver. "A good manager has to know when to say no."

PART OF THE IS MAKE-over came in the form of new people. "David hired a combination of technically advanced people as well as consultants because he needed people to help facilitate change and execution," says Footwear retail systems' Weber, who was hired six months before Dorff.

To make Dorff's cut, IS employees needed to know as much about their business as they did about technology. "I expected them to know about optics, fashion, sell-through, fill rate and manufacturing capacity," Dorff says. "Instead of responding to requirements with technology, they have to look for ways technology could proactively ad-

vance their business."

The IS renovation culminated with the induction of divisional IS leaders to the strategic inner circle. The former CFO underlings are now vice presidents reporting to the presidents or COOs of their divisions. And they maintain dotted-line responsibility to the corporate IT group.

"I'm part of the executive committee with the CEO, CFO and other business-process vice presidents," says LensCrafters' Gunter. "The advantage is that as I put together our long-range IS plan, I feel more confident that it is better integrated with the business."

For their part, divisional managers welcome IS as a new business partner. "Now the IS organization is really a strategic part of the enterprise and participates in making the business better," says Chuck Pierce, former executive vice president of the Footwear Group's Banister factory outlets, who recently left due to management consolidation.

In mid-1992, as things were gelling in IS, Dorff took on sponsorship of enterprisewide reengineering. Again he started small, with the corporate-office financial processes. After developing a process for reengineering, Dorff invited consulting firms to offer proposals for implementing the plan. The financial redesign, implemented in less than nine months, cut days off month-end results reporting and trimmed more than a month off year-end reporting.

Combining this initial success with his consulting pedigree, Dorff was seen as a natural to sponsor the effort corporatewide and to act as cosponsor within divisions. "We needed him to serve as a catalyst in our group and make sure the program moved along," says Pierce, who cosponsored the redesign at Banister. He gives high marks to Dorff's customer focus and teaming approach. "He listened to our needs and had a customer-oriented attitude—not just at the store level but in understanding who the customer is."

Are CIOs best-suited to lead reengineering? It depends on their ability to affect change, Dorff maintains. "Someone has to own the methodology and be the change agent," he says. Functional managers may not do as well in that role

"I saw Dorff deal with a difficult senior executive in IS, and I was amazed at his degree of tolerance. He's not one to step on toes quickly."

—Michael Weber

as CIOs because managers are too immersed in the day-to-day processes affected.

IN THE INTERESTS OF SPEED, reengineering took place simultaneously at the corporate offices and at the Optical, Women's Apparel and Footwear divisions—the worst scenario for a single sponsor. "I got killed," Dorff admits. "It was two-and-a-half full-time jobs, with the half-time job being CIO." The travel was the most murderous part. On a given day, he might fly out to a morning meeting in one city and then wing it to an afternoon meeting in another. "If I had not hired very competent IS people, there was no way I could have backed away from the traditional CIO role" to devote the energy required for reengineering. Dorff also couldn't have pulled it off without the help of cosponsoring executives from each division and the outside consultants who conducted evaluations.

The reengineering teams zeroed in on the customer first. They went into the stores, looked at staff practices and considered whether these added value to the customer's experience.



MICHAEL WEBER had the freedom to execute an aggressive timetable.

PHOTO BY TOM ROGOWSKI



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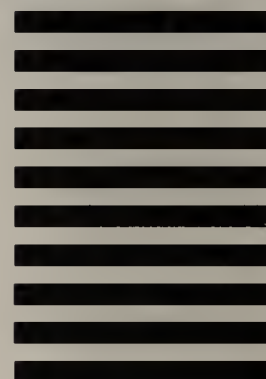
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rience. They found that back-room tasks were preventing staff from spending time with customers. "We either eliminated the paperwork and administrative chores or put in technology to do it faster," Dorff says. Even the jobs of store, district and regional managers were restructured to get them more directly involved with customers and staff. From there, the reengineers tackled merchandise-allocation processes, always working backward from the point of customer contact.

Dorff probably managed to take on so much in a short time because he's more of an agenda-setter than a micromanager. "He sets the overall direction, hires high-quality people and allows them to work on execution," says Weber, who, while director of corporate systems, was charged with transforming corporate IS from a few standalone PCs into a collection of local and wide area networks in only 18 months. "David set an aggressive timetable but gave me the freedom to execute it."

As a personality, Dorff is more an Eisenhower than a Patton. "I saw him deal with a difficult senior executive in IS, and I was amazed at his degree of tolerance," Weber remembers. "He's not one to step on toes quickly."

"I'm not lenient, but I'm understanding," Dorff says. "You don't benefit by crushing the spirit of the organization. You have to help them understand the thought process. If I'm right about something, hopefully they'll catch on. If I'm wrong, I'll come to the realization that there may be a better way to do it."

But reality can thwart the noblest intentions. Dorff admits he's had to terminate a number of employees over the past three years. "He realizes things must move forward, so he's not afraid to make the tough decisions," Weber says.

DORFF'S GOAL WAS NEVER change in itself, but to foster recovery at U.S. Shoe. Though fiscal 1993 will likely be the worst year of the slump (industry analysts expect the company



DONNA WHITE sees Dorff as a role model.

to report a loss), it also saw the first signs of a comeback. Earnings for the third quarter were better than expected, and prospects for the fourth were good as well. "The company looks to be in the early stages of a turnaround," says Jeffrey S. Stein, analyst at McDonald & Co. Investments in Cleveland. Analysts and company officials predict 1995 will mark the company's return to form.

Due credit has already gone to Dorff and his colleagues. "The way he tackled the IS problem really hit the nail on the head," Abraham's Brubaker says. Upgrading POS was "one of the more important factors in helping them get a handle on who the customer is and what merchandise they need in the stores."

In early 1993, Dorff's change-agent exploits caught the attention of newly hired Footwear Group President Noel Hord. Deciding he needed a strong No. 2 to propel the division forward, Hord invited Dorff to be its first COO. "It caught me out of the blue," Dorff says. "I thought it was a wonderful opportunity; the idea of getting involved in a profit-and-loss

operation really intrigued me."

Some of Dorff's COO responsibilities are new—human resources, finance, operations, facilities, business development—but the basic skill set is the same. "He used to forge relationships with divisional presidents, and now he's forging them with executives in the Footwear Group," says Donna White, vice president of Footwear MIS.

White sees Dorff as a role model for herself and other IS directors who desire to lead business initiatives or aspire to non-IS senior management. "He demonstrates the importance of a multifunctional background and the skills it takes to lead people," she says.

"I'd hate to think I'm an exception," Dorff says of his career path. To make the jump into the non-IS executive ranks, "you have to link technology and business so that others see you as a businessperson," he advises. "And you have to let them see your leadership skills in action. That's less likely to happen if you remain in the role of an implementer." **CIO**

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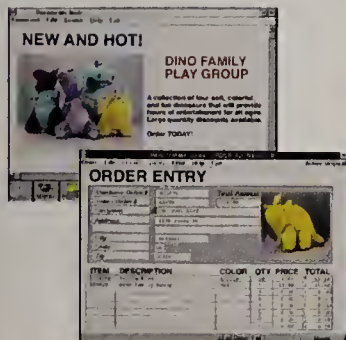
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A DIFFERENCE OF OPINION

Some people will tell you that the CIO is doing a top-notch job, playing a strategic role in the business and showing great leadership potential. Unfortunately, those may not be the people that matter most.

BY DAVID H. FREEDMAN

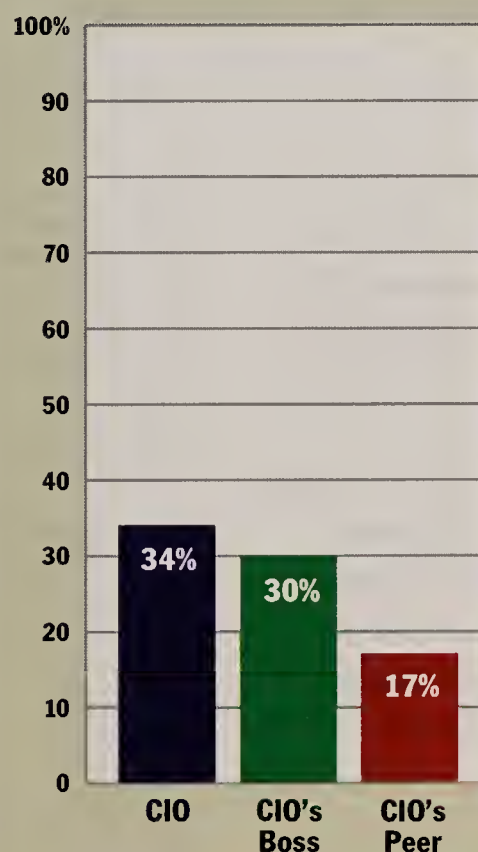
CIOS MAY BE SITTING ON A TIME BOMB. Though their bosses say they approve of the job they're doing, CIOs' executive peers in the organization appear to be building a store of resentment and impatience toward them. Many of these fellow managers regard the CIO's performance very differently, and in many cases less favorably, than do the CIO and the person to whom he or she reports. That's particularly unsettling because one or more of those peers may eventually end up being the CIO's boss.

This cautionary picture emerges from *CIO* magazine's fifth annual IS survey of executives, cosponsored this year by Ernst and Young. Responding to a range of questions about IS management were 102 top IS managers, along with 100 CEOs, CFOs, COOs, vice presidents and other senior, non-IS executives, from companies representing a broad sampling of industry and size.

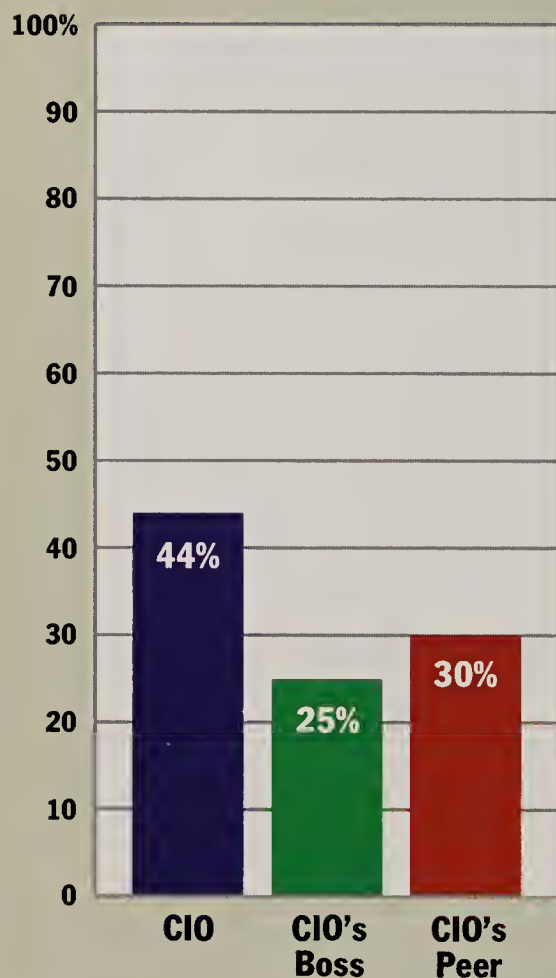
The survey raises serious questions about the extent to which fellow managers perceive CIOs as meeting the needs of the business. "It's not that peers are just down on the CIO," says Mary Silva Doctor, a senior manager at Ernst and Young's Center for Information Technology and Strategy in Boston and one of the architects of the survey. "There's a real feeling that the role of the CIO and the function of IS should be different than what the CIO thinks." Among the survey findings that suggest a serious disconnect between CIOs and their peer managers are the following:

- CIOs, supported to a large extent by their superiors, typically see themselves and their departments as helping lead the way in organi-

Percentage of respondents who said that the CIO and peers work together "exceptionally well."



Percentage of respondents who said they would most likely assign responsibility for leading a business-process reengineering initiative to the CIO.



CIOs may be making a mistake in playing primarily to their bosses' interests in strategic issues while giving short shrift to their peers' operational concerns.

the business problems at hand.

■ Peer managers take a much dimmer view of CIOs' prospects as general managers than do CIOs and their bosses.

The surveyed peer managers didn't give their CIOs an entirely negative report card. In fact, some 60 percent said they were "moderately satisfied" with how effectively IT is being applied in their organizations, and another 6 percent said they were "wholly satisfied"—numbers only slightly smaller than those for CIOs and their direct superiors. (The other choices were "wholly dissatisfied," "moderately dissatisfied" and "neutral or no opinion.")

Yet these same peer managers feel strongly that CIOs could be doing a lot more. A mere 13 percent rated their companies' IS organizations as "ranking among the top of our industry." By comparison, nearly one-third of the CIOs assigned their organizations that ranking, and over 40 percent of the

zationwide reengineering efforts and in fostering corporate change. Their peers, on the other hand, tend to see CIOs and IS as playing purely supportive roles in these critical endeavors.

■ Compared with CIOs and their bosses, peer managers have a low regard for the standing of their companies' IT capabilities within their industries.

■ Peers are far less likely than CIOs and their bosses to want CIOs to focus on strategic issues and more likely to emphasize providing better IT tools and backing up those tools with better support and training.

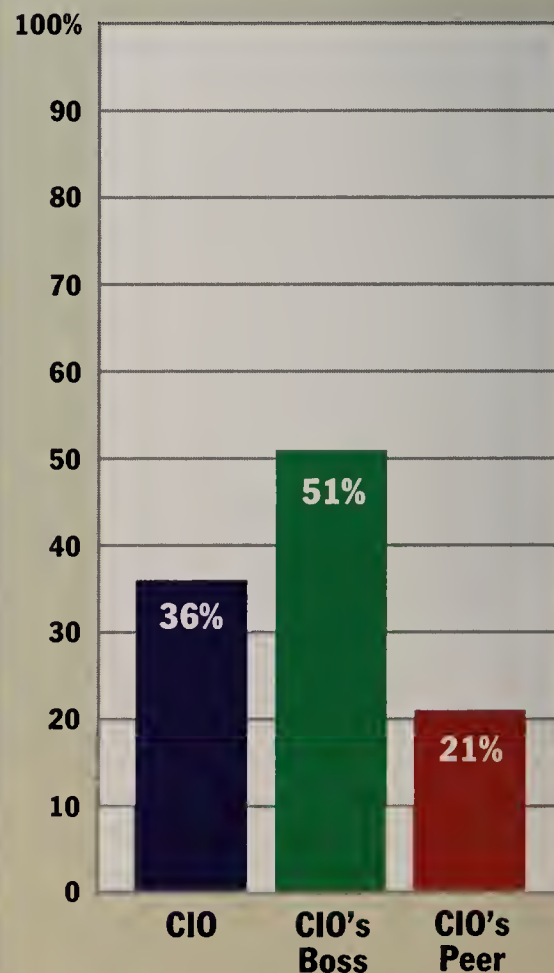
■ CIOs perceive a strong need to sharpen their political and communication skills. But their peer managers feel CIOs should worry less about these challenges and more about successfully managing projects and solving

CIOs' bosses made that claim. "CIOs and bosses are generally in agreement about the role and quality of IS," says Silva Doctor. "But there's a real mismatch with peers."

Perhaps the most-striking disparities arose around questions of which organizational challenges require leadership from the CIO and IS. Whereas one-third of the CIOs said that enabling business-process reengineering—a goal that dominates many corporate agendas these days—is the most-important way IS contributes to the business, only one-tenth of their peers agreed. For their part, peers continued to relegate IS to a more-traditional, less-strategic role: Nearly two-thirds felt providing information for decision-making was its most-important contribution, compared with just under half the bosses and a little more than one-third of the CIOs.

As for the somewhat broader challenge of

Percentage of respondents who said their company's IS organization was "world class" or "best of the industry."



employing IT to enable business change, a full 80 percent of the CIOs believed IS plays a lead role in this regard, and 62 percent of the bosses agreed. Yet only one-third of the peers were willing to assign this role to IS, despite the fact that information technology is central to such change. Indeed, only half the peers granted IS a leadership role even in providing IT architectures and standards, and a mere one-fifth were ready to accept IS leadership in educating executives about the role and potential of information technology. "Peer managers don't seem comfortable with the idea of the CIO being in *any* sort of leadership role," notes Ernst and Young's Richard Swanborg, a principal of the Center for Information Technology and Strategy and another developer of the study.

The emphasis peers place on IS's tactical role was evident in other responses as well. The survey indicated that close to one-third feel that IS makes its greatest contribution to the business by providing either support and user training or new hardware, software and information, as opposed to coming up with IT-related ideas to enable business change. That opinion was held by only 10 percent of the CIOs and 16 percent of their superiors. "The CIO and the CIO's boss are thinking about how to use technology to enable tomorrow's business," says Ernst and Young's Julia Marlowe, a senior manager and another architect of the study. "But the CIO's peers are much more concerned with operating today's business at maximum efficiency and getting stuff out the door."

In keeping with their view of themselves as leaders in the organization, 83 percent of the CIOs felt that being a politician was a valuable skill. But only 38 percent of the peers felt that particular skill belonged in the CIO's repertoire. Similarly, nearly a fifth of the CIOs considered communication skills very important for an IS executive, while only 4 percent of their peers said the same. "The peers are saying, 'I don't want you to talk to me about it anymore; I want results,'" explains Marlowe.

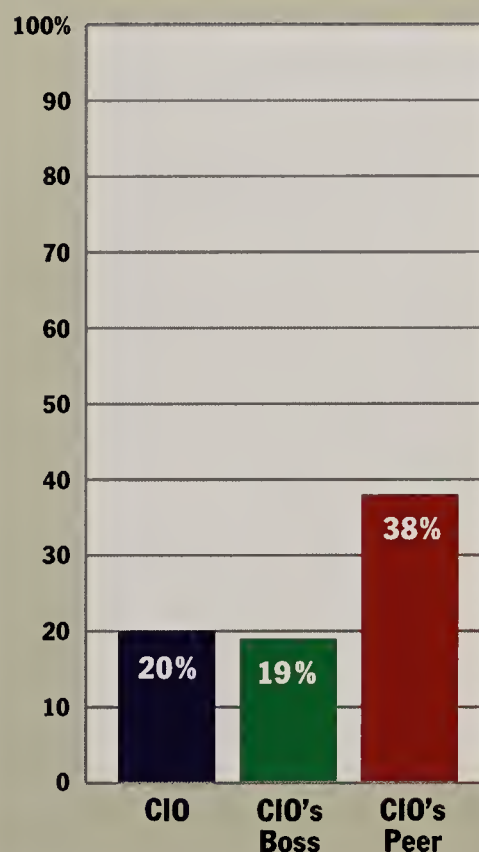
What's more, while more than three-quarters of both CIOs and their bosses felt it was at least possible, if not likely, that the CIO would eventually make the transition into a non-IS management role, only 55 percent of peer managers thought such a move might be in the cards. This was true despite the fact that more than half the peers ranked being "a businessperson" as the most-important CIO characteristic.

Why the disconnect? The reason may center on the CIO's overemphasis on strategic issues, contends Silva Doctor. "CIOs read about the latest thinking on the use of strategic IT in the *Harvard Business Review*, and they want to work on those sorts of things because they're more *fun* to work on," she says. "But as a result, they may not be paying enough attention to the operations requirements of their job. The way CIOs win credibility is through traditional applications development, delivering new products and being on time and on budget," she adds. "It's surprising how many IS organizations are still struggling with these basics."

The transition to client/server computing may be greatly exacerbating the problem. "Just when CIOs had the IT infrastructure in really good shape, along comes the client/server world, and now CIOs are back to spending most of their resources on rearchitecting," says Swanborg. "Peer managers feel a little like someone who has to spend all his time looking at new cars instead of actually being able to take one home and drive it around. There is a growing impatience with seeing the value come out of this rearchitecting process."

The survey results bear out the notion that peers are more likely to feel the pain from delayed delivery of IT services than are bosses. For example, while only 8 percent of bosses said they are heavy users of IT, 40 percent of peer managers characterized themselves this way. In addition, 43 percent of the peers—compared with 20 percent of bosses—expressed a strong interest in IT developments relevant to the business. And 34 percent of the peers, compared with only 21 percent of the bosses, said they were "very knowledgeable"

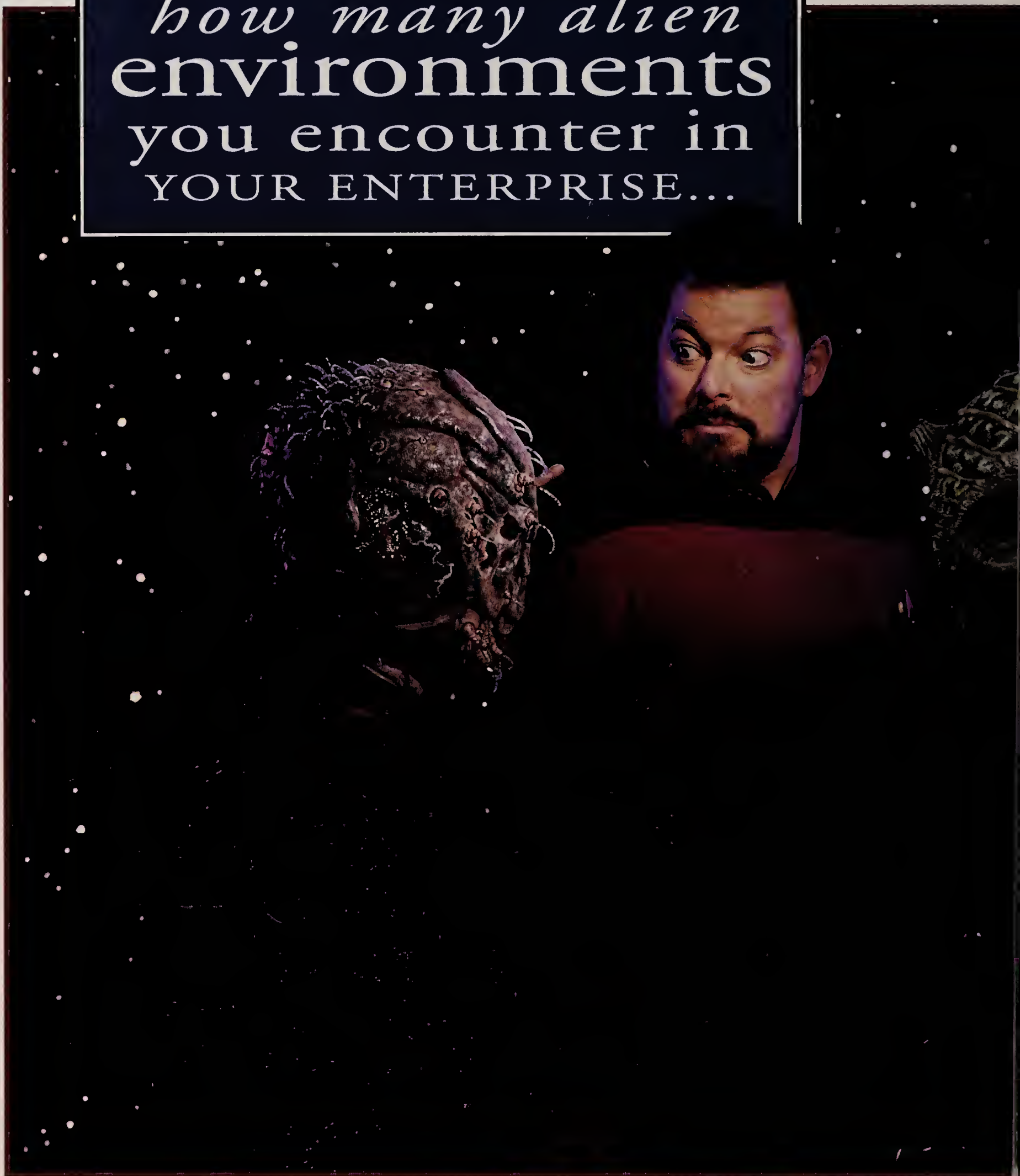
Percentage of respondents who said it was not likely that their CIO could transition into a non-IS role.

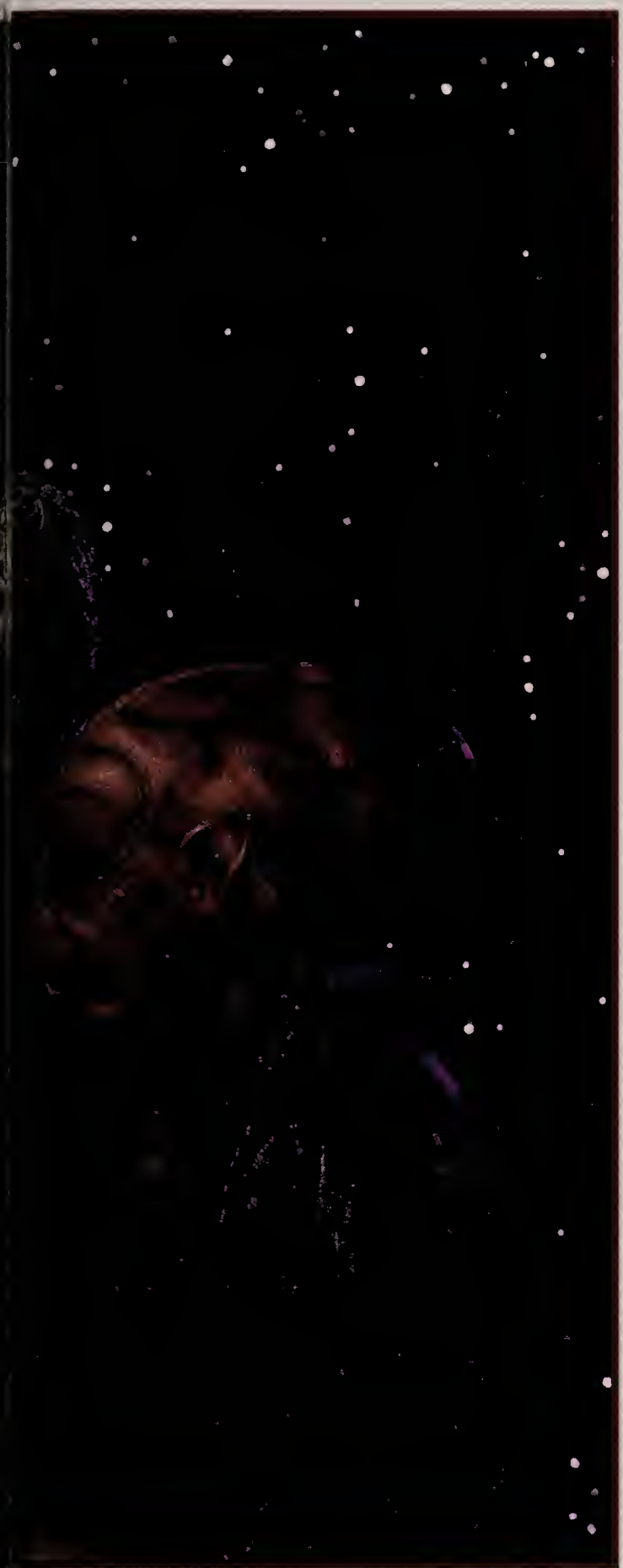


"Peer managers don't seem comfortable with the idea of the CIO being in any sort of leadership role."

—Richard Swanborg

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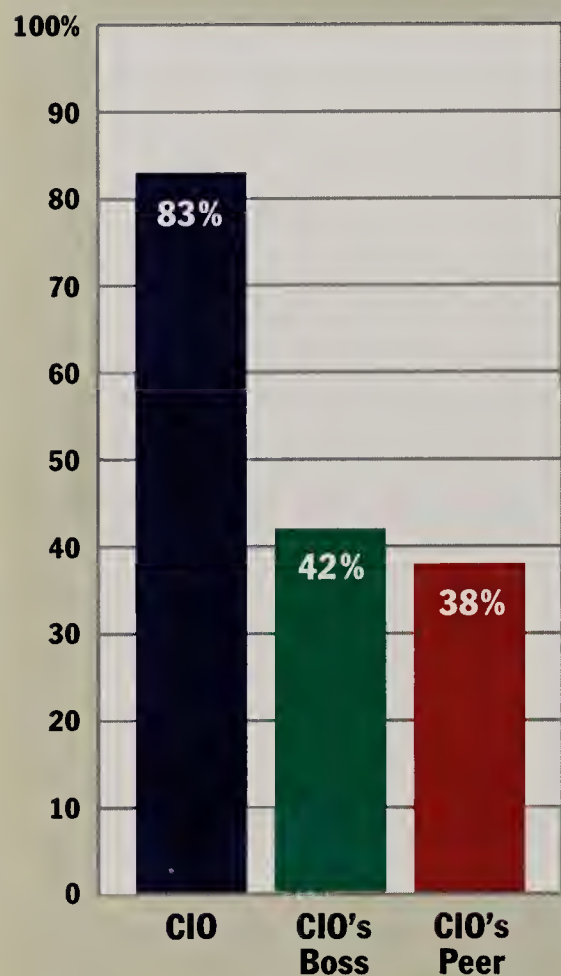


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Boole & Babbage

Percentage of respondents who said that being a "politician" is important for a CIO.



"The boss and peers may not understand why the CIO feels the need to be a politician, but the need is real."

—Richard Swanborg

peers happy, and it's not clear they can do that just through better politicking and communications."

In fact, the survey indicates that the CIOs' superiors *already* claim they judge the CIO not by strategic accomplishment but rather by his or her success in satisfying users. Nearly half the bosses said the perception of user groups was the most-important factor in measuring the CIO's performance, while a little more than one-third of the peers and one-quarter of the CIOs said the same. The fact that the survey shows peers believe such dissatisfaction is currently a problem, and that the CIOs aren't being penalized for it, may simply reflect the fact that the bosses aren't wholly in touch with user-group perceptions. "This points out once again how difficult it is for managers to measure IS performance," notes Swanborg.

Some of the peers' disgruntlement may also stem from the conflict between the peers' impatience to take more control over IS as it moves into the client/server arena and the CIO's reluctance to hand over that control.

about IT trends and/or developments.

These results, says Swanborg, may explain why CIOs' bosses aren't as concerned with operational issues. "A lot of managers don't understand the problems until they get enough hands-on experience with the systems," he explains.

CIOs may be making a mistake in playing primarily to their bosses' interests in strategic issues while giving short shrift to their peers' operational concerns. "Clearly, CIOs have done a good job in marketing upward," says Marlowe. "They've focused their efforts there because that's where they're being measured. But leaving everyone else dissatisfied is going to turn around and bite them, sooner or later. They're going to have to direct more attention to making

Indeed, CIOs and peers in the same organizations seem to disagree about how much control has already been transferred: While only 55 percent of CIOs characterized IS in their organizations as centralized, 70 percent of the peers made that claim. That suggests that while CIOs may believe they have parceled out a great deal of control, many peers still feel under the thumb of a centralized IS function.

"The lines of IS control used to be clear; but now that IS is being integrated into the business, the lines are blurring," says Silva Doctor. "IS has become an important dimension of the business, and peers really want to control it. That's why they don't see CIOs taking leadership roles."

The study suggests these tensions may be coloring the overall relationship between CIOs and their peers. Only 17 percent of peers said they and their CIOs work "exceptionally well" together, while 30 percent said the relationship was merely "OK." CIOs, meanwhile, seem somewhat unaware that there's a problem: More than a third said they and their peers work exceptionally well together, and only 15 percent thought the relationship was OK.

Of course, it's not entirely fair to suggest that the CIO is simply oblivious and misguided when it comes to serving his or her peers. "The CIO is caught in the jaws of powerful changes taking place in businesses today," says Swanborg. "Everyone wants major reengineering of IS. They all want to be empowered to use it, and they all want to own the infrastructure, while the boss wants the CIO to provide strategic leadership and, by the way, cut his budget by 10 percent. The boss and peers may not understand why the CIO feels the need to be a politician, but the need is real."

The fact that they are not alone in misunderstanding the situation is probably small consolation for CIOs. The three survey architects agree that these conflicting demands are taking their toll; as evidence, they point to the fact that 39 percent of the CIOs said they have been in their current positions for two years or less, compared with 23 percent of their peers. This suggests that CIOs interested in untying the knots in their peer relationships might not have time on their side; peers holding a grudge against their CIO simply may be waiting for a new one. 

David H. Freedman is a freelance writer based in Brookline, Mass.



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CIVILIZING CYBERSPACE



Author and online
pioneer Howard
Rheingold argues that
electronic networks are
giving us the chance
to create a better world

BY LEW MCCREARY

I t's been about a quarter of a century since the ARPANET—the computer network of the Department of Defense's Advanced Research Projects Agency—first planted the flags of colonization in the ethereal turf of cyberspace. Soon after, scientists and academics joined the weapons researchers. And now the eager settlers—a mixture of rabble and ruling elite consisting of citizens, entrepreneurs and established business types—are logging on in droves of droves.

It's a safe bet no new world has ever been populated faster. According to Howard Rheingold, editor of the *Whole Earth Review* and author of the book *The Virtual Community* (Addison-Wesley, subtitled "Homesteading on the Electronic Frontier"), at last count there were some 60,000 bulletin-board systems (BBSs) in the United States alone, up from 35,000 to 40,000 a year ago. And the population of the Internet now grows at the mind-boggling rate of 15 percent per month. While some of that growth is still of the "onesie-twosie" variety, much of it is accounted for by the rapid interconnection of large pre-existing networks to the Internet—and hence to one another.

Everything, says Rheingold, is "being linked together into one network." Just as telephone users need never consider how many proprietary membranes a single telephone call passes through, the net, as Rheingold calls it, is now well on its way toward a state of comparable seamlessness.

"If you belong to a small FidoNet BBS, you can still send E-mail back and forth to the Internet. So, at the basic level of, 'Can I send a message to such and such a person and get a message back?'...it really doesn't matter whether you are coming in through a small BBS or a regional system like The WELL, or through the Internet—the real granddaddy of them all."

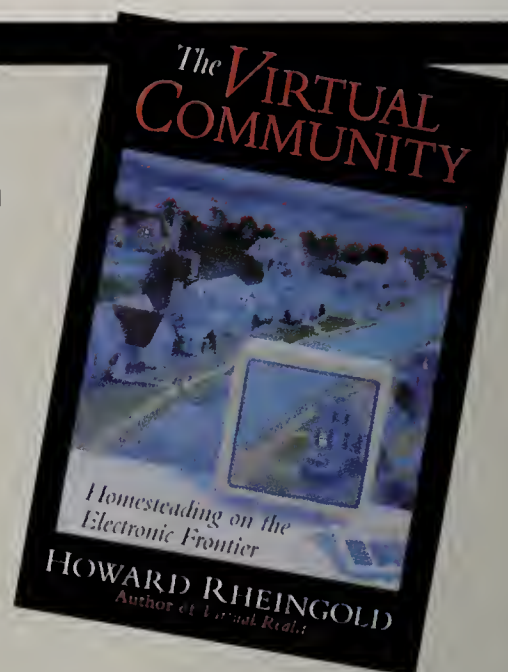
The premise of Rheingold's book is that the discovery and rapid colonization of the "place" now known as cyberspace present society with the challenge and opportunity to create new forms of democratic communication—and perhaps a new definition of community that is both safer and more satisfying than the fractured remnant that the "real world" of 1994 has to offer.

As a member of eight years' standing in the San Francisco-based online network known as The WELL (he was appointed to the board of directors early this year), Rheingold (also the author of eight other books, including *Virtual Reality*) is one of the many pioneers of this social experiment. He holds strong opinions about where it is headed—and what will help or hinder its promise. *CIO* Managing Editor Lew McCreary recently spoke offline with Rheingold in Boston.

CIO: *In The Virtual Community, you propose that cyberspace could be society's last best chance to reconstruct the sense of community that modern life seems to have stripped away. How might that happen?*

VIRTUAL VIRTUES

"People in virtual communities use words on screens to exchange pleasantries and argue, engage in intellectual discourse, conduct commerce, exchange knowledge, fall in love, find friends and lose them, play games, flirt, create a little high art and a lot of idle talk. People in virtual communities do just about everything people do in real life, but we leave our bodies behind. You can't kiss anybody and nobody can punch you in the nose, but a lot can happen within those boundaries. To the millions who have been drawn into it, the richness and vitality of computer-linked cultures is attractive, even addictive."



From The Virtual Community: Homesteading on the Electronic Frontier, by Howard Rheingold, Addison-Wesley (Reading, Mass.), 1993, 325 pages, \$22.95.

RHEINGOLD: [These days,] it's hard to make connections with people who might share your values, might share your interests. But the computer, by [virtue of] being able to structure conversations, enables you to go to a place where someone is talking about politics and find someone whose views you might enjoy.... You don't know where that person is. You don't know what their race or their gender or their age is. A lot of the barriers that used to prevent people from communicating with each other are eliminated. And at the same time you are able to learn what you might have in common.

Now, that doesn't guarantee that a community is going to arise. A lot of the examples that I use in my book come from my experience on The WELL. And the [example] that really convinced me that something was happening there was when my friend Phil... announced that his son was diagnosed with

leukemia. Within minutes there was an online support group organized. When you are faced with a catastrophic illness or something that's traumatic, it helps just to have other people say, "I'm here; you can tell me your story. I sympathize." But, more than that, some of the people who reached out to Phil were an intensive-care nurse, a couple of doctors, a couple of patients who had survived long-term blood disorders.... And by the time his son was in remission, there was a group there that was very tightly knit, even though not many of those people had ever met each other face to face.

CIO: *Given the chaos and imperfection of the "real" world, the relative newness of cyberspace suggests a clean slate. Does it present an opportunity to create a better world?*

RHEINGOLD: I believe that to be true. And I think it's [largely because of] the many-to-many aspect of it.... [Traditionally,] the great advances in telecommunications and media have been broadcast media—a small number of people controlling the information that a large number of people have access to. Now a large number of people have access to a large number of people. And that is inherently democratic. There are a lot of people out there who have something to say. You may not hear them on the radio; you may not see them on television.... [But] now we have a means by which they can say it to each other.

CIO: *In the example of your friend Phil, The WELL becomes a combination of heart and mind, and—as you say somewhere in the book—a quick way of assembling "a cheap think tank."*

RHEINGOLD: Yes. But [the think-tank aspect] is entirely separate [from the heart component]. Whether or not you feel a "heart" connection, you can use the computer's ability to contact people, across different lines and around common interests, to amplify your ability to gather information.

It's been proven time and again in different communities. Let's say, for example, that your community is telephone engineers. You might say [online conference participants "say" rather than "type"], "I've got this part here, and it says, 'Never connect this to an RS-232 port.' But I once saw somebody do that. How can you do it safely?"

And 10 minutes later, somebody who logs on from Singapore says, "Oh, yeah. You can do it. But you'd better make sure you've got your black wire and your red wire reversed."

It's astonishing. It's sort of a game. You throw the question out there, and people you may never have communicated with before will throw the answer in.... There's not really a direct reciprocity, [such that] a person says, "You tell me X, and later I'll tell you Y."

CIO: *But there does seem to be a sort of golden-rule-based information economy.*

RHEINGOLD: If you are recognized as a person who gives answers freely, then you're...a resource that is valuable to people. And if you ask a question, it's likely that people are going to go to a little more trouble to answer that question. In my experience, that small amount of extra effort to give an answer—that you already know—pays off in the long run in goodwill. So, we've created a kind of information economy that's more like a gift economy than a market economy. Or maybe it's something new—a mixture of the two. It's what they call diffuse reciprocity. You may never return the favor to the person who paid you the favor, but someone else will.

Now, it's the ties that bind all those people together that enable them to do that. When the group gets to be too large or too fractious, then that may not happen.

CIO: *So the Internet's 15 percent monthly growth rate raises an interesting question: While this new community is forming now in a largely unregulated way, will there soon be a need for regulation? What would appropriate governance consist of on the net?*

RHEINGOLD: Well, my experience has been that on the net...rules are something that small groups of people think are going to work to solve some problem, and then large groups of other people put their ingenuity toward working around those rules. Norms are something that emerge spontaneously from a lot of interactions among people. There are norms on the net. But it's pretty rough and tumble....

CIO: *"Netiquette?"*

RHEINGOLD: I think netiquette is one of the

things that the old-timers need to teach the new people. The medium lowers inhibitions to enable people to communicate with each other intimately, even though they are strangers. [But] this same lowering of inhibitions also enables otherwise mild-mannered people to flame—to yell at each other over the network. You have to teach people that when they flame, they're polluting the waters. And they're going to make [the experience] less valuable to themselves.

I think this is something that people learn through sad experience and something that the old-timers tell the new-timers. But the socialization really hasn't caught up with the rate of growth. So there are strains there, definitely.

CIO: *Do you think this socialization can happen in an unregulated or organic way?*

RHEINGOLD: I've seen it happen. The WELL, when I joined it eight years ago, was 500 people; now it's about 8,000 or 9,000 people. It's like living in a town of 500 that grows to be 8,000 or 9,000. In the beginning, you know everyone. You see them all every day. People are fairly polite with each other, and they leave their doors unlocked, their files unprotected. When there's 8,000 or 9,000 people, you don't see everybody every day. You don't know everybody; you don't know who to trust. And maybe you don't leave your files out there for anyone to look at.

But what has happened is that smaller subcommunities, within what used to be one

"I think we're seeing the development of new kinds of social relationships."

community, now begin developing into smaller areas of trust.... You know, social scientists talk about tightly bonded groups and loosely bonded groups. Tightly bonded groups are the ones like your family and the people you work with immediately—your workgroup. And you also have loose ties with other people you may not know that well but have an acquaintance with. And *they* in turn have tight bonds....

Well, with any group in which there are only tight bonds, you don't have that breadth of expertise that you can call upon.... If, for example, you lose your job, and the people in your immediate family are the only ones you ever communicate with, where are you gonna hear about a new job? If you've got a lot of loose connections to people who have other groups that trust them, then you have a much wider range of possibilities.

What happens when the group gets larger is that [it] is no longer a tightly bonded group; it's a [collection] of small, tightly bonded groups with loose ties among them.

I think we're seeing the development of new kinds of social relationships. I don't think the value of this kind of many-to-many medium is going to be lost as it grows; I think the scale is going to change. People will deal with a small scale for the people they trust and a larger scale for finding out what's going on in the world.

CIO: *What's the proper role of private enterprises on the net?*

RHEINGOLD: This is a very important area that we, as a society, have to discuss right now. If you look at the example of the personal-computer industry, that'll give you an idea of how a new technology like this could form a platform for innovation, [upon which] the large companies and small companies could create a whole new industry and new kinds of wealth....

What's happening with telecommunications is that this many-to-many computer network is now becoming...very valuable as a means for delivering information and entertainment services in the future. We're seeing the big telephone companies and the big cable companies and the big entertainment companies merging....

Now, we're never going to bring the benefits of this medium in a democratic way to our whole society without taking advantage

WHAT'S YOUR (ON) LINE?

Whether you are among the seasoned veterans or the novice users of online communications, CIO is interested in learning more about your online activities. Tell us how you network, how you amuse and enlighten yourself, and how you extend your reach and expertise by tapping into the "cheap think tank" that a modem now makes available. Is this the future writ large in a flurry of bits or just another innovative way to distract ourselves from the really important stuff?

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of the economies of scale that a large cable company or a large telephone company can bring to it. Yet, I would like to see something akin to what happened with Apple and Microsoft continue to happen in the information society. Let's allow these big companies to use their economies of scale, [but] let's find a way [such] that their enormous wealth and power don't constrain all of the millions of other potential businesses from competing.

Diversity in the technology marketplace is going to do everybody a lot of good. Big companies [will create] a rising tide that lifts all boats, and [in exchange] they're going to take a little slice of everybody's profits. But everyone else should have an opportunity to build their own industries [and] create their own services for each other.

CIO: *Places like The WELL have a kind of purity of purpose that might on some level be at odds with, or threatened by, commercial development as it might occur if left unregulated. Should noncommercial enclaves be preserved—perhaps some bandwidth being set aside for completely noncommercial uses?*

RHEINGOLD: That's what I'd like to see. I think when you read in the newspapers and see on television talk of these megamergers, all they're talking about is video-on-demand, 500 channels of television—the old model of sending a commodity down the pipeline for people to consume it. They're *not* talking about people communicating with each other.... That's not really perceived as the biggest moneymaker for these big companies.

So, if...two or three or four companies are going to control the conduit that brings programming into our homes, perhaps we ought to ask for a "greenbelt" of public access going out. If they send a billion bits down the pipeline, maybe we ought to ask for 10 million bits up the pipeline. [That way,] I can put my little video BBS on the net and maybe get a couple hundred—or couple hundred thousand—subscribers.

There's also a very strong incentive for democratic discourse when people are able to communicate with each other. That's really the basis of democracy: citizens talking with each other. [Take the example of] the Rodney King videotape. You saw what happened when the price of access to video cameras dropped enough. It was inevitable

that someone would point one out the window....

[Last fall,] the daughter of a friend of mine on The WELL was in Moscow, and she had an Internet account. She could look out her window and see what was happening at the [Russian] White House. She had a better view than CNN did! And she would type on her screen what she was seeing. A lot of people were able to participate in that.

Every desktop now has the potential of being a publisher and a broadcasting station and an eyewitness. They're never going to compete with these giant companies that can produce the \$100 million movies and send them downstream. But they can compete as points of origin for information and news. And that could enrich us all if we can

keep that small capacity to send information back upstream to everyone else, as well as just receive it downstream....

[But] unless citizens understand what our stake in this is, there's no real incentive for either the big companies or the big politicians to grant that to us. It's something citizens need to understand and ask for.

CIO: *Does it send a little shiver down your spine when you contemplate the Bell Atlantic and TCI merger?*

RHEINGOLD: What sent a shiver down my spine was [hearing] the first public statements of John Malone, the TCI guy.... He said, essentially, "This set-top box is gonna enable us to control the communications and entertainment capabilities of the majority of American households."

Well, I don't want to see any one person control the *content* of those media. It may be that, as with the telephone, we're going to have one company providing the conduit. But let's prevent them from [limiting] the content. I mean, as long as they're not gonna stop me from talking about politics from my point of view or sending, maybe, my home video up to compete with their latest Paramount or Time-Warner entertainment package, then I think we can all live together.

But, you know, if a communications company, a cable company and an entertainment company are the sole controllers of that medium, there's a strong incentive for them to not allow competing content to run on the conduit. And that's where we need to step in and make some kind of a deal. **CIO**

"Every desktop now has the potential of being a publisher and a broadcasting station and an eyewitness."

Who You Gonna Call?

At many companies, users with technical problems or questions call their local help desks. With the growth in end-user computing, these tech-support operations are increasingly important to productivity.

BY PATRICK BULTEMA

Help desks, or tech-support operations, have come a long way since they were first conceived to run interference for busy programmers. Now they are technology-enabled, vital links in the distributed IT environments proliferating throughout corporate America.

In most companies, help desks were formed in the last decade because programmers and others in computer operations didn't want to take calls from end users. After all, most people in this field didn't go into it to talk with dissatisfied customers. As a result, the early help desks were a dumping ground for problems and were perceived to be of little value.

Initially, these help desks operated as clearinghouses: They logged problems and then passed them on to other people in IS who could solve them. At the start, this was all help desks were capable of because the people answering the telephones had little technical knowledge or experience. But over time, help-desk

staff began to gain the skills and knowledge required to solve many of the problems they were logging. Furthermore, help-desk and IS management began to recognize the cost and customer-satisfaction benefits they could realize by having the help desk resolve as many problems as possible. So, help desks increasingly were charged with resolving a high percentage of the problems and service requests they received.

Based on the *1993 Survey of Help Desk Practices*, published by Help Desk Institute, an average of 71 percent of calls received by help desks are resolved by the help-desk staff. Help desks assign 22 percent of the calls they receive to other IS support organizations and 7 percent to outside vendors. This represents a slight increase in resolution rate over the 69 percent reported in 1992.

The contribution represented by this resolution rate is important for three reasons. First, there is still debate over the productivity being returned for the trillions of dollars invested in information technology. Although companies have gained huge benefits in some areas of operation because of IT, these have often been offset by end-user problems and questions and by the inappropriate use of technology. In many cases, efficient and effective support represents the most-promising approach for improving the return companies are getting from their investments in IT.

Second, companies increasingly recognize the cost of supporting the technology they own. Reports from the Gartner Group, Forrester Research Inc. and others indicate that the direct cost of supporting a workstation is now about three times what it costs to acquire the workstation, hardware and software included. So any improvements in the effectiveness and efficiency of support can



have dramatic impact on the IS budget.

Third, companies are coming to recognize the cost of unplanned support. This is the support that takes place when a user has a problem or question and consults a co-worker. Often, another co-worker is brought in as well. As a result, a problem or usage question can result in lost productivity for three workers. Nolan, Norton & Co. recently reported that the cost of this peer-to-peer support ranges from \$6,000 to \$15,000 per workstation per year.

These costs don't show up in the budget, and this type of support is far less efficient and effective than what is provided by professional support organizations.

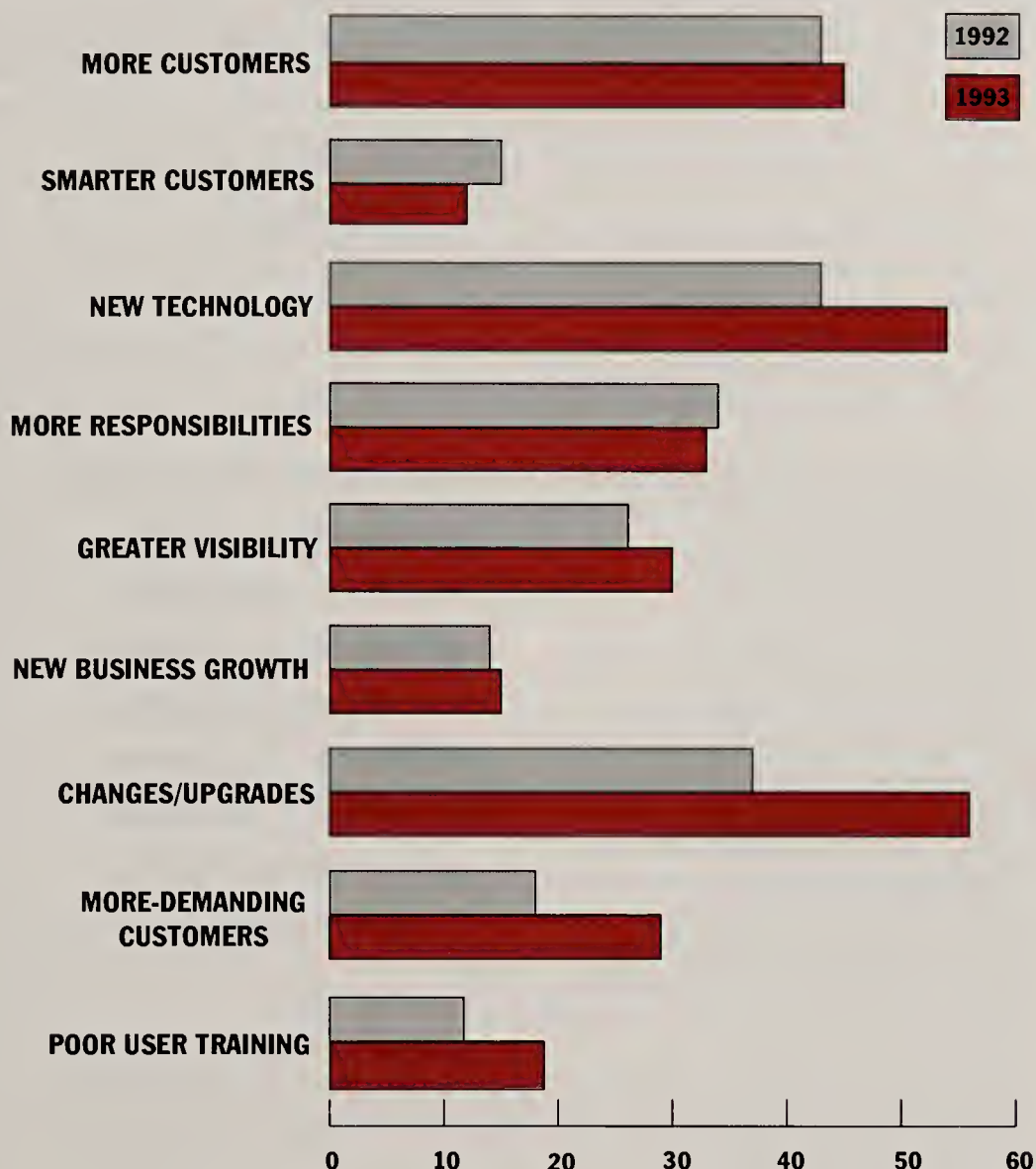
For these reasons, IS organizations are coming to recognize the critical role played by help desks and related support organizations. As a result, there is a trend for help desks to move up in the organizational structure. In 1992, 36 percent of help desks reported to the IS executive and 4 percent reported to a senior executive outside of IS. In 1993, 42 percent reported to the IS executive and 10 percent to a senior executive outside of IS.

Add to this a related survey result that over 75 percent of help desks plan to provide support from a single, centralized help desk within the next two years (that's up from 57 percent today), and you can see that the perceived importance of help desks is clearly on the rise.

Increasing Call Volumes

Help desks are also experiencing increased call volumes, and 67 percent stated that they expect these volumes to continue to increase in 1994. However, a new trend is emerging to account for that increase. In the past, an increasing number of customers

WHY CALL VOLUMES ARE RISING



Source: Help Desk Institute, 1993

was the main reason for increased call volumes. In 1993, new technologies and changes and upgrades to current technologies took the lead (see chart).

Another new trend is a move from problem-related calls to usage questions. In 1992, help desks reported that 38 percent of their application-related calls were usage questions. In 1993, just over 50 percent of application-related calls were usage questions. In other words, people are having fewer problems with their systems (bug reports, batch problems, lost reports, service disruptions and so on), but they have more questions on how to use the systems

on their desks. Since usage questions are often more demanding and time-consuming for help-desk staff, this represents a significant challenge for the future.

Decreasing Staff Levels

At the same time that help desks report increasing call volumes and more-challenging usage questions, their staff sizes are remaining the same or even shrinking slightly. For example, according to the 1992 survey, an average-size help desk had 13 staff members; in 1993 that number was down to 12. Similarly, in 1992 help desks reported that they expected a 15 percent growth in staff. This

growth didn't happen, and in 1993 the same help desks reported that they expect no additional growth in 1994.

This will represent a significant problem for many organizations. Over the last few years, help desks have been able to respond to an increasing number of service requests without increased staffing levels through improved operations, management and staff training. They also have improved the efficiency of their operations and staff through the use of automation technologies at the help desk. In some cases, help desks have implemented knowledge tools (expert systems, hypertext and on-line reference systems) to increase the effectiveness and efficiency of their staffs.

It appears, however, that most of these help desks are quickly reaching the limits of efficiency gains, assuming the current paradigm of one help-desk agent responding to one customer phoning the help desk for service. Many help desks will have difficulty meeting service demands in 1994 with current staffing levels, and many will seek out new paradigms for service delivery in 1994 and beyond.

Technology for Service Delivery

Help desks are increasingly looking to technology to improve both the quality of their service and the efficiency of their operations. For instance, in 1992, 51 percent of help desks reported that they used problem-management software to manage their operations and 12 percent predicted they would implement such technology. In 1993, 77 percent reported they were using an automated problem-management system. Similar trends appear in other areas where help desks are using technology to streamline their internal operations.

An interesting exception is in the use of expert systems. In 1992, only 9 percent of help desks indicated they were using an expert system, but 22 percent stated they planned to in the future. In 1993, 12 percent reported they were using an expert system and 43 percent stated they

planned to. Clearly, this is the system of good intentions. In many cases, this startling gap between intentions and reality may be the result of underestimating the difficulty in selecting and implementing a successful, cost-effective expert system. For many support organizations, an expert system represents a valuable resource; for others, it isn't an effective option.

Help desks are also increasing their

In the next few years, many help desks are likely to search for new support paradigms. Specifically, many will move away from what we call the "phones and problems" paradigm to one of "engineering the support function."

use of telecommunications technologies. In 1992, 34 percent had automated call distributors (ACDs), 53 percent had voice mail and 7 percent had interactive voice-response units (IVRUs). Of the same help desks, 9 percent predicted they would add an ACD, 6 percent predicted they would add voice mail and 12 percent predicted they would add an IVRU.

Within 12 months, these help desks had already met or outpaced their predictions, with 43 percent using ACDs, 73 percent using voice mail and 14 percent using IVRU technology. An increasing number of help desks reported that they were also using or planning to add advanced voice processing such as audiotext, voice recognition and fax-on-demand. These and other telecom technologies represent a move toward integrating phone and computer technologies in such a way that the telephone actually delivers service to customers without the need

for a conversation with a help-desk agent.

New Paradigms

In the next few years, many help desks are likely to search for new support paradigms. Specifically, many will move away from what we call the "phones and problems" paradigm to one of "engineering the support function." This new paradigm will increasingly look to technology—not only to improve the efficiency of the support organization but, more important, to actually deliver support to customers.

In some cases, this will involve self-help systems maintained by the support organization. In others, users will access support systems at the desktop. Regardless, support organizations should be exploring technologies that deliver quality support without the need for a one-on-one phone conversation. Today, these technologies include the range of advanced voice-processing technologies like IVRU, audiotext, voice recognition and fax-on-demand. They also include centrally maintained knowledge and diagnostic systems as well as distributed knowledge tools that reside on the desktop.

An emerging standard that will be extremely important is the Desktop Management Interface being championed by Intel Corp., Hewlett-Packard Co. and other companies. This standard establishes a kernel of code that resides at the desktop, enabling a range of support and management capabilities, including remote control, configuration management, electronic software distribution, remote backup and so on.

These new tools enable support and management without a phone conversation or visit by support staff to the customer site. And this represents a new paradigm for support organizations in the next few years. Support organizations must begin retooling now to be able to meet new demands with new tools and methods. 

Patrick Bultema is director of product development at Help Desk Institute in Colorado Springs, Colo.

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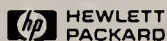
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The Baby and the Bath Water

Out with the old and in with the new may be good advice when referring to old slippers, but what about costly legacy systems? With a PC-based reverse-engineering tool from KnowledgeWare Inc., organizations can recover existing applications and transfer them to client/server environments. NorthStar captures and analyzes business logic from applications and programs and manages their migration to client/server. NorthStar's extensive analysis tools graphically diagram the flow of applications and the structure chart of programs to help programmers understand systems and identify what data to overlook and what information to transfer to the new platform. Running under Microsoft Windows 3.1 or IBM's OS/2, NorthStar is the newest addition to KnowledgeWare's redevelopment suite of tools and services.

KnowledgeWare designed and developed NorthStar with Integrated Microcomputer Systems Inc. It costs \$24,000 for a single license; \$75,000 for five. Call 404 231-8575.

When the Apple Falls Far from the Tree

Macintosh users at home, on the road or even overseas can work as easily as if they were in the office with a new family of remote-access products from Apple Computer Inc. The product line replaces the company's current remote-access product and provides increased flexibility and security.

Communicating over telephone lines, the Apple Remote Access Personal Server allows individuals or a small workgroup to send and receive electronic mail, access other Macintosh computers or file servers and print to network printers. For larger groups, the Access MultiPort Server can turn a single Macintosh into a server that supports four ports and, with additional serial cards and cable, up to 16 simultaneous dial-up connections. The Apple Remote Access Client allows individuals using a desktop Macintosh or PowerBook computer to connect to any Remote Access-compatible server.

The Personal Server costs \$249, the MultiPort Server is \$1,799, and the Client costs \$69 for a single pack. For more information, call the Apple Network Information Line at 408 862-3385.



Better Than One

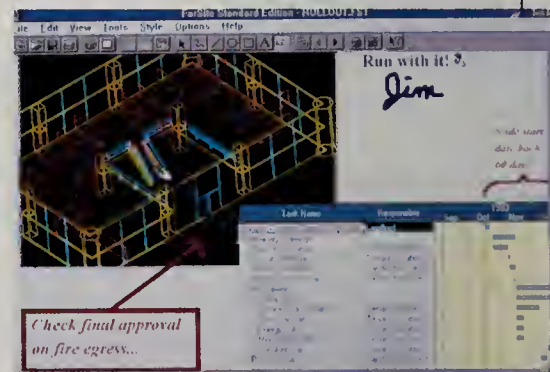
You get into the office early to get a jump on things. Your computer informs you that the server is down, and your systems manager won't be in for another hour. Vinca Corp.'s StandbyServer circumvents those problems.

StandbyServer, which works in conjunction with Novell NetWare, enables users to connect a second computer to the file server as an online standby server. The primary server recognizes storage devices in the second computer as if they were in the server's own housing, and users can mirror network data to the standby machine. If the server fails, the standby machine is brought online as the primary server, with all data intact.

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Working Together for Less

Electronic meetings are the cat's meow—if your organization is able to absorb the investment they typically require. DataBeam



Corp. has an affordable alternative to traditional teleconferencing methods. FarSite for Windows requires only standard telephone lines, Windows-compatible PCs and high-speed modems (9,600 bits per second recommended).

At \$179 per user, the Windows-based software enables electronic-conferencing participants in two locations to share images, documents and other visual information in real-time from their PCs. FarSite features a shared whiteboard, concurrent online pointers, a variety of drawing tools and an electronic "tray" for storing changes made to screen displays. Users can view, annotate, and pan and zoom across shared images.

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The product requires a 386- or 486-based PC running Windows 3.1 with 4MB RAM and 1.5MB disk space, and a mouse or mouse-compatible pointing device. It transmits typical slides in less than seven seconds at 14,400 bits per second. FarSite supports the ITU-T (formerly the CCITT) T.120 conferencing standards. For additional information, call 606 245-3500.



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Editorial, Advertising and Business Offices: 492 Old Connecticut Path, PO Box 9208, Framingham, Massachusetts 01701-9208, (508) 872-8200. **Postal Information:** CIO (ISSN 0894-9301) is published semimonthly; monthly in July and August; and as a combined issue December 15/January 1 by CIO Publishing Inc., 492 Old Connecticut Path, PO Box 9208, Framingham, Massachusetts 01701-9208. Second-class postage paid at Framingham, MA, and at additional mailing offices. **Reprints:** Copyright 1994 by CIO Publishing Inc. All rights reserved. Reproduction of material appearing in CIO is forbidden without written permission. Send all reprint requests to Permissions Editor, CIO, 492 Old Connecticut Path, PO Box 9208, Framingham, Massachusetts 01701-9208. **Photocopy Rights:** Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by CIO for users through the Copyright Clearance Center (CCC), provided that the base fee of \$3.00 per copy of the article, plus \$.50 per page is paid directly to Copyright Clearance Center, 27 Congress Street, Salem, Massachusetts 01970. Please specify: ISSN 0894-9301. Permission to photocopy does not extend to contributed articles followed by this symbol: † **Microfilm:** CIO issues and articles can be purchased on 16mm and 35mm microfilm and on 105mm microfiche through University Microfilms International, Serials Acquisitions Department, 300 N. Zeeb Road, Ann Arbor, Michigan 48106. **Subscriptions:** Address inquiries to CIO, 492 Old Connecticut Path, P.O. Box 9208, Framingham, Massachusetts 01701-9208. CIO is free to qualified information executives. To all others the one-year basic rate is \$98 for U.S. and Canada. \$185 to foreign countries (payable in U.S. funds only). The single copy price is \$7. Please allow 4 to 6 weeks for new subscriptions to begin. **Change of Address:** Please fax a copy of current subscription label along with new address to (508) 872-0618. Allow 4 to 6 weeks for change to take effect. **Postmaster:** Send change of address to CIO, P.O. Box 489, Northbrook, Illinois 60065-9816.

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The Image of Good Health

With an expansion in the works, one hospital had to cure its paperwork ills before it could proceed. Image processing did the trick.

The process of moving paper through a hospital, particularly patient records, is plodding at best, crippling at worst. At the very least it can be a tourniquet that constricts an organization's ability to grow. Such was the case for Pitt County Memorial Hospital Inc., a 700-bed, multiple-facility, regional health-care provider in Greenville, N.C. With 5.5 million paper records a year clogging its process arteries and plans to add a 200-bed critical-care tower, the prognosis was a process breakdown.

"We had to head this off at the pass. We had to start streamlining the process before we started the tower," says Edward L. McFall, vice president of information systems.

The biggest problem was the patient medical chart, which tracks a patient's progress from admitting to discharge. Paper charts could never be found when they were needed. Physicians often had to be chased down to complete and sign off on their patients' charts—and most charts required multiple sign-offs.

Records were bound to slip through the cracks. On any given day, an average of 2,000 charts were designated incomplete for billing purposes. This delayed the billing process, constraining cash flow to the hospital and insurance reim-

bursement to patients.

The IS group figured image processing could help by converting all paper records to electronic images and streamlining the process through automated image workflow. But back in the late 1980s, when Pitt looked into such a solution, products were largely limited to an archiving function. "None really met our needs in helping streamline the medical-records workflow and facilitating the physicians' abilities to complete the chart process," McFall recalls. So Pitt partnered with Andersen Consulting to invent a smarter solution.

Pitt and Andersen began development in 1990, using another hospital's archival image system as a kernel. From this, they extracted routines that enabled the system to access data from Pitt's existing databases. Using Plexus XDP software tools from Recognition International Inc. of Dallas, they added document-image management and connectivity between Unix-based hardware and peripherals. The system went online three months ago.

The streamlined process relies on a simple principle: Electronic records, created upon patient admission, are always available to authorized parties,

even simultaneously. Staff don't need to look for charts, write out requests for records transfer or transact handoffs among physicians assigned to the same patient.

The system also helps get charts completed. When physicians log on, it automatically presents a list of actions they must take on active patient records. When they click on these items, the system grabs the appropriate incomplete chart image and displays it. This not only facilitates completion but enhances accuracy by allowing doctors to quickly dispatch the routine charts and spend more time with the difficult and exceptional.

The payoff for the multimillion-dollar investment will be formally analyzed in a few months. But one month after the rollout, incomplete charts dropped from the average of 2,000 to 432. Pitt also hasn't had to hire new staff to chase down and deliver charts, even as it has expanded. Clerical staff may even be cut.

The next step is to extend the system regionally across an information highway, delivering imaged records to other hospitals, private physicians and medical schools.

—Richard Pastore

VITAL STATISTICS

Organization: Pitt County Memorial Hospital Inc., Greenville, N.C.

Application: Electronic medical-records system

Technologies: Custom image-processing software installed on a Hewlett-Packard Co. 9000 Model 870 server linked by an Ethernet network to 65 workstations throughout the hospital and various scanners, printers and optical-disk jukeboxes; rights to the system have been sold to First Data Corp. of Charlotte, N.C., which markets it as First Perspective

Scope: 600 affiliated physicians, nurses and medical-records staff

Project Leader: Edward L. McFall, vice president of information systems

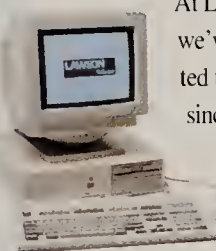
Objective: To eliminate paper-based medical records, streamline records processing and billing, and facilitate chart-completion process

Expected Payoff: Reduction in paper-based inefficiencies and related costs, new-hiring avoidance, staff cuts, and faster and more-thorough chart completion; ROI projected in three-and-a-half years

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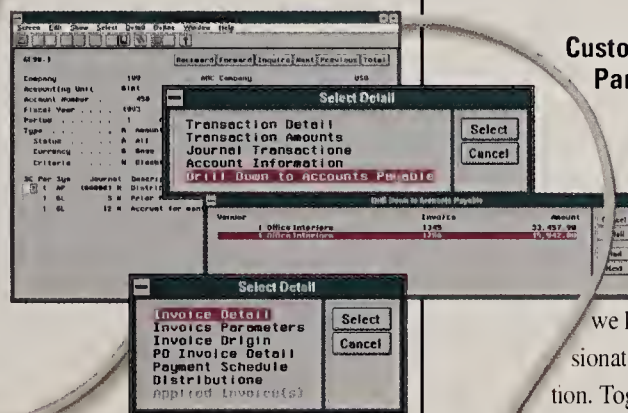
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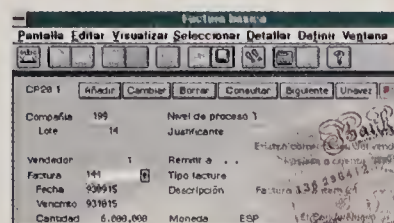
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